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Catalog of the Benthic Marine Algae of the Philippines

PAUL C. SILVA,
ERNANI G. MEÑEZ,
and RICHARD L. MOE

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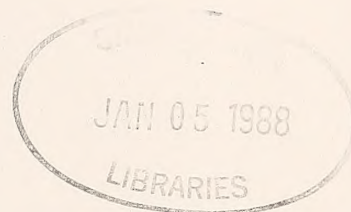
Catalog of the Benthic Marine Algae of the Philippines

*Paul C. Silva,
Ernani G. Meñez,
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ABSTRACT

Silva, Paul C., Ernani G. Meñez, and Richard L. Moe. Catalog of the Benthic Marine Algae of the Philippines. *Smithsonian Contributions to the Marine Sciences*, number 27, 179 pages, 2 figures, 1987.—All published records of benthic marine algae from the Philippines are assembled in a catalog with the taxa arranged according to an assumed phylogenetic scheme to the rank of family. The taxonomic framework takes into consideration recently published opinions. Each taxonomic synonym is accompanied by a citation of the author who first proposed the synonymy. Additional taxonomic and nomenclatural notes are provided where deemed useful. Type localities are indicated for all accepted names and taxonomic synonyms.

Cyanophyceae (blue-green algae) comprise 19 genera with 61 species. They are arranged according to the Geitlerian system, accompanied by a reconciliation with the Drouetian system. Their nomenclature is based on a 1753 Linnaean starting point rather than the later starting points specified by the International Code of Botanical Nomenclature.

Rhodophyceae (red algae) comprise 130 genera with 506 specific or infraspecific taxa, of which 35 have Philippine type localities.

Phaeophyceae (brown algae) comprise 23 genera with 154 species or infraspecific taxa, of which 27 have Philippine type localities.

Chlorophyceae (green algae) comprise 37 genera with 251 species or infraspecific taxa, of which 20 have Philippine type localities.

Portieria Zanardini 1851 is adopted in place of *Chondrococcus* Kützing 1847, *Eupogodon* Kützing 1845 in place of *Dasyopsis* (Montagne) Montagne 1847, and *Hincksia* J.E. Gray 1864 in place of *Giffordia* Batters 1893. In addition, new binomials are proposed in *Gelidium*, *Halymenia*, *Callophyllis*, *Sporolithon*, *Gracilaria*, *Ceramium*, *Polysiphonia*, and *Hormophysa*.

The catalog is preceded by a brief history of Philippine phycology.

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Contents

	<i>Page</i>
Introduction	1
Acknowledgments	1
History of Philippine Phycology	2
Scope of Catalog	2
Format of Catalog	5
Catalog	7
Cyanophyceae	7
Reconciliation with the Drouetian System	15
Rhodophyceae	17
Phaeophyceae	73
Chlorophyceae	91
Records Determined Only to Genus	123
Nomenclatural Notes (by Paul C. Silva)	127
Literature Cited	132
Index	157

We dedicate this work to Dr. Gregorio T. Velasquez, Professor Emeritus,
University of the Philippines, devoted champion of phycology and phycologists in
the Philippines.

Catalog of the Benthic Marine Algae of the Philippines

*Paul C. Silva, Ernani G. Meñez,
and Richard L. Moe*

Introduction

During May–June 1978 and April–May 1979, Ernani G. Meñez participated in the Smithsonian Institution Philippines Expedition (SIPHILEXP), which was officially based at the Silliman University Marine Laboratory in Dumaguete City, Negros Island. The primary objective was to collect marine organisms from the Central Visayas for studies on taxonomy and distribution. A large collection of benthic marine algae was obtained and subsequently studied.

In preparation for SIPHILEXP, Meñez initiated a compilation of the species of benthic marine algae reported from the Philippines and a list of references pertaining to them. Because of the existence of unique phycological resources in the Herbarium of the University of California at Berkeley, specifically the Index Nominum Algarum and the Bibliographia Phycologica Universalis (both in the form of card files compiled and maintained by Paul C. Silva), he took his preliminary draft there for checking. The utility of collaboration was perceived and an arrangement was made whereby Meñez would be responsible for the citations of species while Silva would be responsible for providing the taxonomic framework and correct nomenclature. In the five years that have passed since the cooperative effort was begun, the number of publications dealing with Philippine seaweeds has increased markedly, and both Meñez and Silva have been involved in keeping pace with the output. In the summer of 1984, Richard L. Moe was asked to join the project, in view of his competency in word-processing and broad phycological experience.

The purpose of this catalog is to integrate published information on the taxonomy and distribution of Philippine benthic marine algae and thus provide a foundation for

future exploration and research. Rather than make an uncritical compilation of records (such as Velasquez, Trono, and Doty, 1975), we decided to incorporate as much information as was pertinent to understanding the taxonomic structure and nomenclature adopted in this catalog. The continued relevance of this information obviously depends upon the reliability of the determinations that underlie the published records. Considering that very little critical work has been done on Philippine marine algae, it is reasonable to assume that a certain portion of the incorporated information will eventually prove irrelevant. Nonetheless, we believe that this catalog will facilitate and perhaps stimulate future work by pointing out geographic and taxonomic areas most in need of attention. Unlike publications that are intended to endure like monoliths, this catalog is intended to become obsolete, with the rate of obsolescence an index of the progress in Philippine phycology. Because tens of thousands of data are incorporated in this catalog, the possibility of making errors is great, but we hope that we have initiated far fewer than we have encountered in the literature and corrected.

ACKNOWLEDGMENTS.—For assistance in obtaining copies of pertinent literature, we are especially grateful to Ms. Hilconida Calumpong, Silliman University Marine Laboratory, Dumaguete City, Dr. Paciente A. Cordero, Junior, Division of Botany, Philippine National Museum, Manila, Mrs. Edna T. Fortes-Ganzon, Marine Science Institute, University of the Philippines, Quezon City, Mr. Lawrence M. Liao, Department of Biology, University of San Carlos, Cebu City, and Dr. Milagrosa R. Martinez, University of the Philippines at Los Baños. We are indebted to Dr. Thomas O. Duncan, Director of the Herbarium of the University of California at Berkeley, for his efforts in obtaining a computer system for the Herbarium and for encouraging us to use it in preparing the electronic manuscript of this catalog.

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History of Philippine Phycology

Detailed accounts of the history of Philippine phycology have been provided by Velasquez (1962b; 1985) and Cordero (1972; 1977a), but it seems useful to review its most salient features, especially with regard to marine algae. Unlike many areas that were explored biologically by colonial powers in the late eighteenth and early nineteenth centuries, the Philippines were not so favored by Spain, and the earliest information on its plants and their uses came from resident Augustinian monks (M. Blanco, 1837). Unfortunately, there are no extant specimens to document this work. In October 1836, Hugh Cuming, an English naturalist especially interested in conchology, arrived at Manila to begin three years of exploration that would take him to nearly every large island in the archipelago (Merrill, 1926). He made a small but important collection of marine algae, which was reported on by Montagne (1844a) and also served as the basis of *Galaxaura fastigiata* and *Liagora caenomyce*, both described by Decaisne (1842).

During the last half of the nineteenth century, four expeditions returned to Europe with varying amounts of Philippine algae. The *Preussische Expedition nach Ost-Asien* contributed collections made at Manila and Zamboanga in 1861 by its zoologist, Eduard von Martens; these collections were the subject of a publication by Eduard's father, Georg von Martens (1868). In 1874–1875, H.N. Moseley, the naturalist of the Challenger Expedition, collected algae at the Gigantes Islands (Iloilo), Mactan I. (Cebu), and Zamboanga, which were recorded by Dickie (1874a, 1876a, 1876b, 1877). Cesare Marcacci, lieutenant on board the *Vettor Pisani*, collected algae at Ticao Island (Masbate) and Cavite during the circumnavigation of that ship in 1884. They were published on by Piccone (1886, 1889). The most important expedition, by far, was the Siboga Expedition to the Indonesian region, which made extensive collections in 1899 in the Sulu Archipelago. These collections contributed significantly to monographs of *Halimeda* (Barton, 1901), the Codiaceae (Gepp and Gepp, 1911), and the Corallinaceae (Foslie, 1904; Weber-van Bosse, 1904b). The entire phycological harvest of the expedition was treated by Weber-van Bosse (1913a, 1921, 1923, 1928).

In the Commonwealth period, Elmer Drew Merrill was impartial in his messianic pursuit of Philippine botany during 20 years of service to the Bureau of Agriculture, the Bureau of Forestry, the Bureau of Science, and the University of the Philippines (Quisumbing, 1957). Although primarily interested in vascular plants, he caused the Bureau of Science to assemble a large collection of algae. These were sent for study in 1911–1913 to M.A. Howe at the New York Botanical Garden and to W.A. Setchell at the University of California at Berkeley. No systematic study was made of these specimens at that time, but in 1951 the Chlorophyceae and Phaeophyceae at Berkeley were loaned

to W.R. Taylor of the University of Michigan, who ultimately published on them (Taylor, 1966b). The all-important University of Michigan connection was established in 1935–1936, when H.H. Bartlett, Chairman of its Department of Botany, was an exchange professor at the University of the Philippines (Voss, 1961). A man of wide interests and great energy, he made massive collections of plants, including many algae, throughout the archipelago. These were sent to Ann Arbor, where the algae were studied by Taylor and his students. Bartlett returned to the Philippines under the auspices of the United States Department of Agriculture in 1940–1941, making further collections of algae in Mindanao. His collections have been cited in numerous papers, including Chou (1945, 1947) on *Galaxaura*, Gilbert (1942, 1943, 1947) on Chlorophyceae, Taylor (1964, 1966b) on Chlorophyceae and Phaeophyceae, and Tseng and Gilbert (1942) on *Codium*.

In the period of the Republic, Philippine phycology has come to share the dramatic surge of interest and activity in the science that initially was centered in the industrial nations. The leader and catalyst has been Gregorio T. Velasquez, Professor Emeritus of Botany, University of the Philippines, who received his doctorate at the University of Michigan in 1939, working on the viability of algae obtained from the digestive tract of a fresh-water fish. Although primarily interested in Cyanophyceae, Velasquez has had a profound influence on all aspects of Philippine phycology. The productivity of his academic offspring has created an urgent need for this catalog.

Awareness of benthic marine algae in the Philippines has been greatly heightened by the successful efforts to grow certain of them commercially (*Eucheuma*, *Gracilaria*, and *Caulerpa*). Not only has the welfare of many coastal communities been improved, but the nation as a whole has benefited from increased exports. Most phycological publications in the past two decades have been floristic, and critical taxonomic studies must now be given high priority. It is essential that the rapidly accumulating information on algal ecology, physiology, and biochemistry, much of which is of potential economic importance, be attached to correct names.

Scope of Catalog

To avoid the difficulty of having to assess each paper for its worthiness of inclusion, we have been comprehensive rather than selective, citing every reference to Philippine benthic marine algae that we could find, regardless of information content. Publications dealing with biochemical, physiological, ecological, and economic features supplement the basic core of taxonomic and morphological literature. Previous compilations were included. Twenty species that were erroneously cited by Velasquez, Trono, and Doty (1975) have been omitted from this catalog. Most of these erroneous records were taken from various reports of the

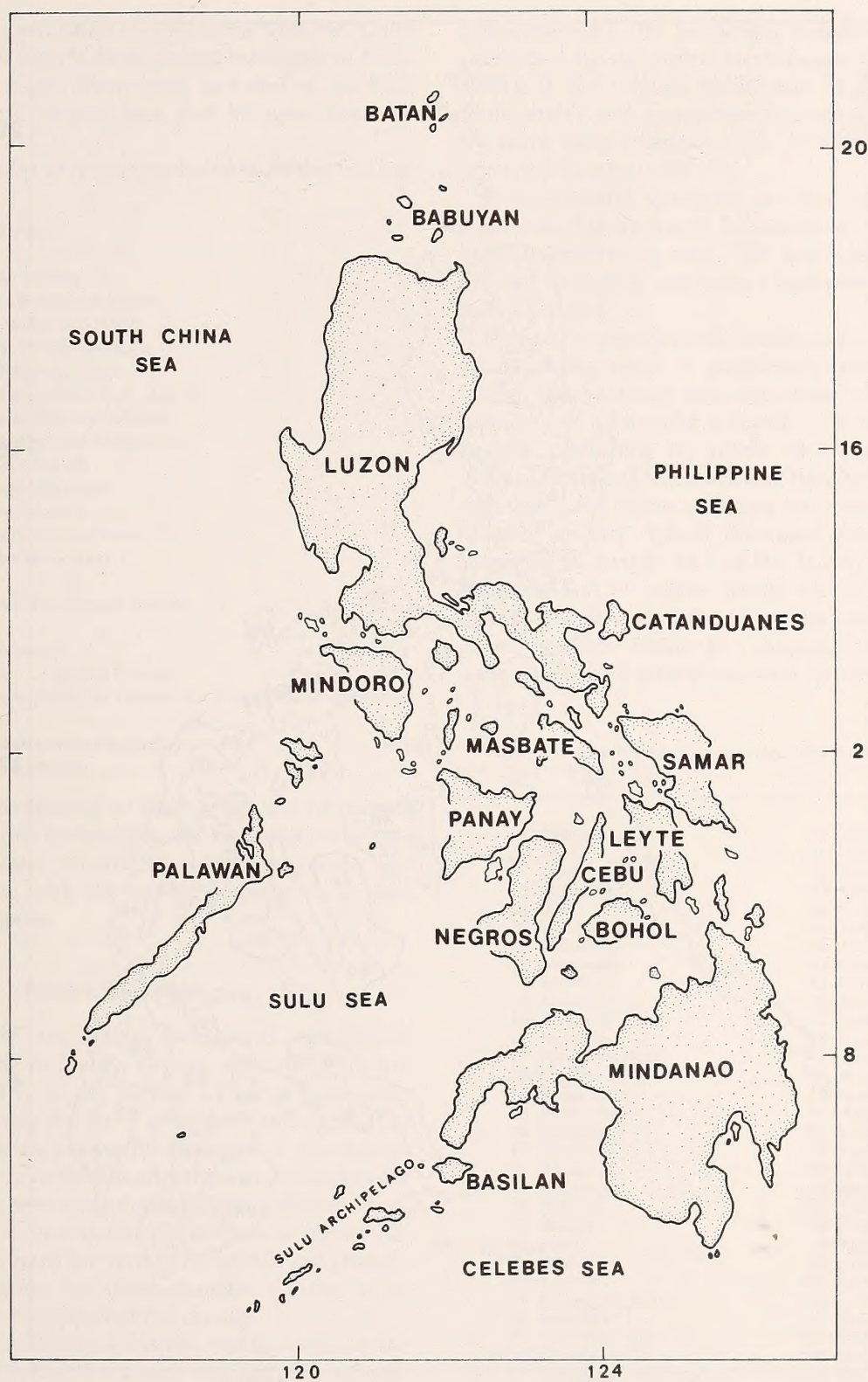


FIGURE 1.—Map of the Philippines showing major islands.

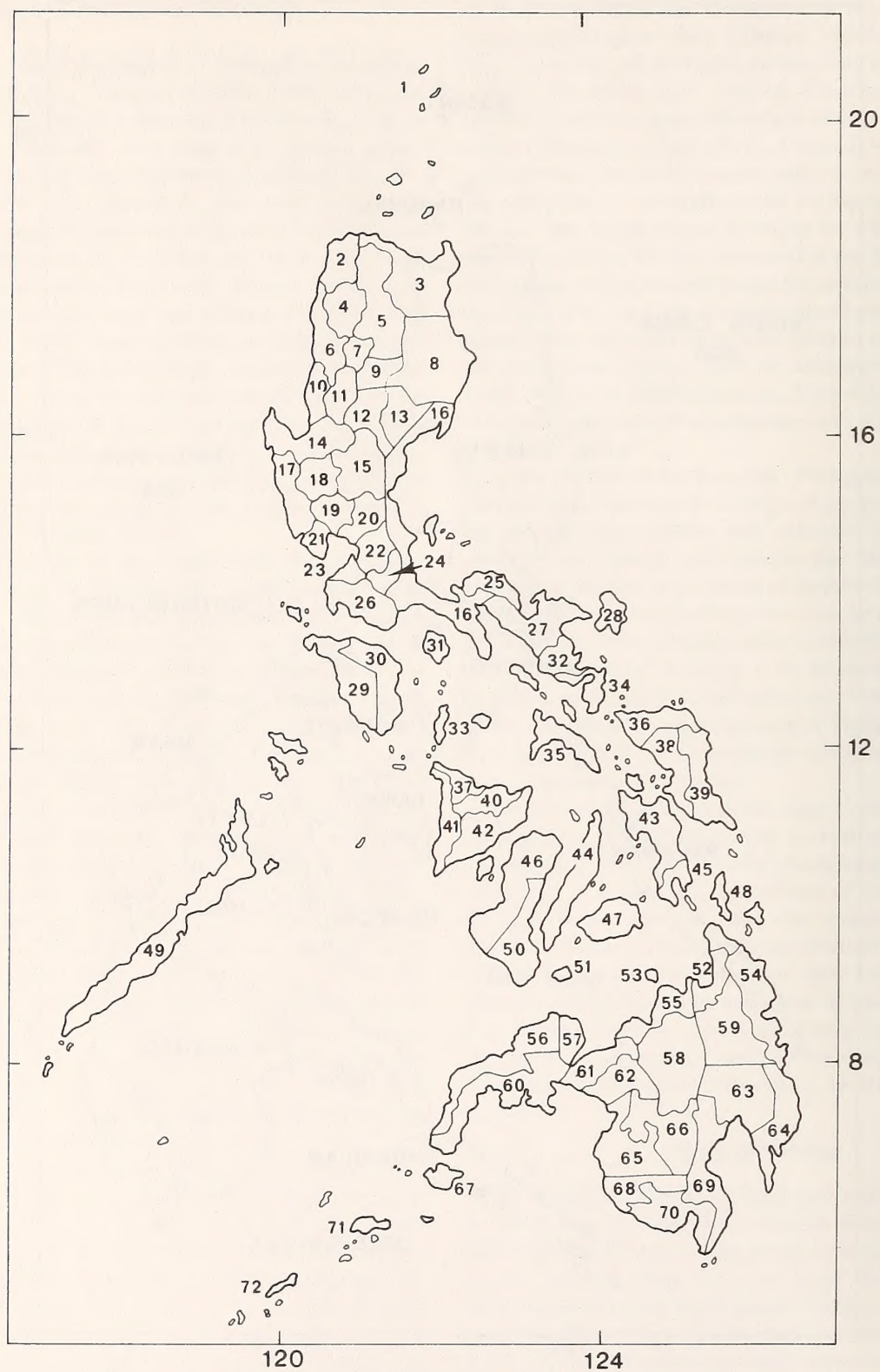


FIGURE 2.—Map of the Philippines with the provinces designated by number. See Table 1 for a key to the numbers. (Redrawn from Vreeland et al., (second edition) 1976:25, fig. 4.)

Siboga Expedition and based on collections from the Talud Islands and Kawio Islands, both groups belonging to Indonesia. Species were also erroneously included on the basis of collections from Borneo, Java, and Mangaia (Cook Islands).

The following is a list of species excluded from this catalog:

- Cyanophyceae
- Oscillatoria brevis* Kützing
- Rhodophyceae
- Cheilosporum spectabile* Harvey
- Coriophyllum setchellii* Weber-van Bosse
- Cruoriella lemoineae* Weber-van Bosse
- Euchemea dichotomum* Weber-van Bosse
- Galaxaura sibogae* Weber-van Bosse
- Gelidium anthoninii* Lamouroux ex C. Agardh
- Herposiphonia prorepens* (Harvey) Schmitz
- Laurencia pinnatifida* (Hudson) Lamouroux
- Liagora pulverulenta* C. Agardh
- Mastophora macrocarpa* Montagne
- Nitophyllum tongatense* Grunow
- Polycelia vanhovei* Weber-van Bosse
- Polysiphonia pentamera* Hollenberg
- Phaeophyceae
- Sphacelaria pulvinata* J. Hooker and Harvey
- Chlorophyceae
- Boodlea vanbosseae* Reinbold
- Chaetomorpha clavata* (C. Agardh) Kützing
- Cladophora aegagropila* [error in citation for *Cladophora* (*Aegagropila*) *sibogae* Reinbold]
- Microdictyon umbilicatum* (Velley) Setchell
- Microdictyon vanbosseae* Setchell

Special problems relating to the compilation of records of Cyanophyceae are discussed in the introduction to that group. Brackish-water records from lagoons, canals, and swamps connecting with the sea or adjacent to it were included for all groups.

Format of Catalog

The sequence of taxa follows an assumed phylogenetic scheme to the rank of family. Genera within a family are listed alphabetically, as are species within a genus. Appended to the catalog is a list of citations of undescribed or undetermined species, assigned only to genus. An attempt was made to include in this list only those citations that are accompanied by at least some description or collection data.

In the process of constructing the taxonomic framework of this catalog, the need for various nomenclatural changes arose. Documentation for these changes is given in an appendix to avoid disruption of the catalog.

For each accepted name, synonym, and basionym at the rank of species or below, the author and the place of valid publication are given, followed by a chronological list of references to Philippine records under that name. The type locality of each basionym is indicated. When the location of the holotype or lectotype specimen is given (as in the reconciliation of the Geitlerian and Drouetian classifications of

Cyanophyceae), the herbarium is indicated by the code prescribed by the Index Herbariorum (Holmgren et al., 1981). If the original publication of a name includes a Philippine record, an appropriate annotation is added unless the name has a Philippine type, in which case the name is preceded by an asterisk (*).

Nomenclatural synonyms are listed before taxonomic synonyms. The authority for taxonomic synonymy is given in an accompanying note. This innovative feature enables the user to consult and assess a taxonomic opinion as originally proposed.

Unusual nomenclatural situations are also explained in accompanying notes. A particularly troublesome and frequently encountered situation arises when the intended basionym of a binomial is shown to be a later homonym. Because, according to Article 45.3 of the International Code of Botanical Nomenclature (ICBN; Voss et al., 1983), only legitimate names are taken into consideration for purposes of priority, a later homonym (which is illegitimate according to Article 64.1 of the ICBN) cannot serve as a basionym and its author should not be placed in parentheses. The first transfer of the basionym to a different genus, however, results in a binomial that is treated as a nomen novum in accordance with Article 72, Note 1. The

TABLE 1.—List of Philippine provinces with numerical designation.

No.	Province	No.	Province
1	Batanes	37	Aklan
2	Ilocos Norte	38	Samar
3	Cagayan	39	Eastern Samar
4	Abra	40	Capiz
5	Kalinga-Apayao	41	Antique
6	Ilocos Sur	42	Iloilo
7	Mountain	43	Leyte
8	Isabela	44	Cebu
9	Ifugao	45	Southern Leyte
10	La Union	46	Negros Occidental
11	Benguet	47	Bohol
12	Nueva Vizcaya	48	Surigao del Norte
13	Quirino	49	Palawan
14	Pangasinan	50	Negros Oriental
15	Nueva Ecija	51	Siquijor
16	Quezon	52	Agusan del Norte
17	Zambales	53	Camiguin
18	Tarlac	54	Surigao del Sur
19	Pampanga	55	Misamis Oriental
20	Bulacan	56	Zamboanga del Norte
21	Bataan	57	Misamis Occidental
22	Rizal	58	Bukidnon
23	Cavite	59	Agusan del Sur
24	Laguna	60	Zamboanga del Sur
25	Camarines Norte	61	Lanao del Norte
26	Batangas	62	Lanao del Sur
27	Camarines Sur	63	Davao
28	Catanduanes	64	Davao Oriental
29	Occidental Mindoro	65	Maguindanao
30	Oriental Mindoro	66	North Cotabato
31	Marinduque	67	Basilan
32	Albay	68	Sultan Kudarat
33	Romblon	69	Davao del Sur
34	Sorsogon	70	South Cotabato
35	Masbate	71	Sulu
36	Northern Samar	72	Tawitawi

nomen novum serves as the basionym (unless it too is a later homonym). *Gracilaria lichenoides*, for example, is usually attributed to (Turner) Greville, but *Fucus lichenoides* Turner, the intended basionym, is a later homonym, and hence not priorable. The first generic placement outside *Fucus* was to *Gigartina* by Lamouroux. *Gigartina lichenoides* Lamouroux thus is treated as a nomen novum and serves as the basionym of *Sphaerococcus lichenoides* and *Gracilaria lichenoides*.

Geographic distribution is indicated primarily by island or island group (Figure 1), secondarily by province within the island or island group (Figure 2). The islands or island groups are listed in four successive northwest-southeast sweeps, thus: BATANES, LUZON, CATANDUANES; MINDORO, MARINDUQUE, ROMBLON, MASBATE, SAMAR, LEYTE; PANAY, GUIMARAS, NEGROS, CEBU, SIKUJOR, BOHOL, CAMIGUIN, MINDANAO, BASILAN; PALAWAN, SULU. Within Luzon, the provinces are listed from north to south, first on the west coast (from Cagayan to Batangas), then on the east coast (from Isabela to Sorsogon). When appropriate, certain minor islands (arbitrarily limited to those labeled on United States Hydrographic Office Chart 14,200) are indicated parenthetically within provinces.

Cordero (1977a) has classified the Philippine Archipelago into four marine floristic regions, namely, the South China Sea region (Batanes, northwestern Luzon, and Mindoro), the Pacific Ocean region (northeastern Luzon, Marinduque, and Romblon), the Sulu Sea-Celebes Sea region (Palawan, Sulu Archipelago, Basilan, and the southern tip of Zamboanga del Sur), and the inland water region (all Visayan provinces and most of Mindanao). While we appreciate this attempt to bring phytogeographical order to the physiographic chaos presented by the 7,100 islands of the Philippine Archipelago, we believe that the purposes of this catalog are better served by an essentially linear sequence of localities. This sequence obviates the complication of listing Luzon in three regions and Mindanao in two regions. (In fact, the east coast of Mindanao, not specified by Cordero, should be included in the Pacific Ocean region, giving a total of three regions for that island.) It also avoids the arbitrary placement of Cagayan Province in the Pacific Ocean region. (The Babuyan Islands, which are politically part of Cagayan Province, are influenced equally by the South China Sea and the Pacific Ocean, as are the Batan Islands, which Cordero places in the South China Sea region.)

Catalog

Class CYANOPHYCEAE

Blue-green algae stand at a conspicuous distance from red, brown, and green seaweeds, both taxonomically and ecologically. Nonetheless, because they frequently are encountered by marine phycologists and preserved as herbarium specimens, they are included in this catalog. Most marine floristic accounts omit them, reflecting either insufficient interest on the part of the author or a desire to avoid numerous uncertainties peculiar to the group. When dealing with organisms that are tolerant over extremely broad physico-chemical ranges, a collector should document each collection with adequate data—including salinity or pH (whichever is appropriate) and temperature. Most herbarium specimens of blue-green algae are accompanied by meager ecological information, if any, and such indications as "along Narvacan Beach" are ambiguous when the user is faced with deciding whether the alga should be considered marine. It could have been growing in a freshwater pool next to the beach, on rocks far above high-tide mark and splashed by seawater with uncertain frequency, or on intertidal rocks. Alternatively, it could have lain free on the mud at low tide, having originated in a nearby freshwater stream or in offshore plankton. Even when critical information is given on the specimen, it is frequently omitted by the recording author.

Deciding which records of blue-green algae should be considered marine and benthic is only the first obstacle. This group is plagued with other uncertainties. Its taxonomy has been polarized between the Geitlerian and Drouetian schools. Geitler (1942), building on the monographs of Bornet and Flahault (1886–1888) and Gomont (1892–1893), recognized 4 orders, 22 families, 140 genera, and more than 1200 species, while Drouet (1981) recognized 2 orders, 6 families, 24 genera, and 61 species. Recently, microbiologists have proposed a system of classification based solely on characters revealed in pure cultures (Rippka et al., 1979).

Having delineated the taxonomic units, one is then faced with the problem of determining their correct names. This is a critical process that is complicated in the case of blue-green algae by the provision of the International Code of Botanical Nomenclature that nomenclature of the Nostocales begins with the monographs of Bornet and Flahault and of Gomont. For reasons discussed in the appended Nomenclatural Notes, later starting points are ignored in this catalog.

All names recorded for the Philippines except the few published by Dickie (1876a, 1877) essentially follow Bornet and Flahault for heterocystous Nostocales and Gomont for homocystous Nostocales. For this reason, the records have been arranged according to those monographs rather than being integrated into the Drouetian system. A few records appear under two names, one given by Velasquez or another Filipino worker, the other by Drouet. These instances of duplication are noted. The catalog of blue-green algal records is followed by a reconciliation of the two systems.

As though the foregoing ecological, taxonomic, and nomenclatural uncertainties were not enough, recently the inclusion of these organisms in the algae has been questioned. Placing greater importance on the lack of membrane-bounded organelles than on the presence of oxygen-evolving photosynthesis, certain workers (led by the late Roger Stanier) treat these organisms as bacteria (Cyanobacteria). Some of these workers appear to have little faith in their decision, however, as they publish articles on Cyanobacteria in phycological journals!

Order CHROOCOCCALES

Family CHROOCOCCACEAE

Anacystis Meneghini

Anacystis aeruginosa (Zanardini) Drouet and Daily

Palmogloea aeruginosa Zanardini, 1872:162, pl. IX.D [type locality: Cape Datu (Tandjoeng Datoek), boundary between Sarawak, Malaysia and West Kalimantan, Indonesia].

Anacystis aeruginosa (Zanardini) Drouet and Daily, 1948:77.—Velasquez, 1950:312.—Drouet and Daily, 1956:77.—Velasquez and Soriano, 1957:486.—Velasquez, 1962a:279, pl. 1: fig. 7.—Velasquez, Trono, and Doty, 1975:127.—Cordero, 1976c:10, 12.—Reyes, 1978:139, pl. 1: figs. 1, 2.—Martinez, 1984:24.

PHILIPPINE DISTRIBUTION.—BATANES. MINDORO: Oriental Mindoro. SIKUJOR. PALAWAN.

Family ENTOPHYSALIDACEAE

Entophysalis Kützing

Entophysalis conferta (Kützing) Drouet and Daily

Palmella conferta Kützing, 1845:149 [type locality: Cuxhaven, West Germany].

Entophysalis conferta (Kützing) Drouet and Daily, 1948:79; 1956:118.—Velasquez, 1962a:281, pl. 1: fig. 9.—Velasquez, Trono, and Doty, 1975:143.—Martinez, 1984:36.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal, Manila.

Order NOSTOCALES

Family NOSTOCACEAE

Anabaina Bory de Saint-Vincent

This generic name is usually spelled *Anabaena*, an orthographic variant used by Bornet and Flahault (1888 [1886–1888]:224).

Anabaina pseudoscillatoria Bory de Saint-Vincent

Anabaina pseudoscillatoria Bory de Saint-Vincent, 1822:308 [*"pseudo-oscillatoria"*] [type locality: not specified; Everquem, near Gent, Belgium fide Drouet, 1978:157, 186].

Anabaina oscillarioides Bory de Saint-Vincent, 1831:29 [explanation of pl. LII: figs. 7a–c].—Drouet, 1978:195.—Cordero, 1981d:62, fig. 1.—Martinez, 1984:22.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. PANAY: Aklan. PALAWAN (incl. Cuyo I.).

NOTE.—Bory de Saint-Vincent changed the epithet of this specific name without explanation. He has been followed in this regard by all subsequent authors. The Oriental Mindoro record (*Velasquez 1045*) was previously published under *Hormothamnium enteromorphoides* (Velasquez, 1962a:351), while the Palawan records (*Velasquez 3019* and *Merrill 9158*) were previously published under *H. solutum* (Velasquez, 1955:175 and 1962a:351, respectively).

Hormothamnium Grunow

The variant spelling *Hormothamnion* was initiated by Bornet and Flahault (1888 [1886–1888]:259) and has been used by all subsequent authors.

Hormothamnium enteromorphoides Grunow

Hormothamnium enteromorphoides Grunow, 1867:31, pl. I: fig. 25 [type locality: Guadeloupe].—Velasquez, 1950:323; 1962a:350, pl. 10: fig. 120.—Reyes, 1978:141, pl. 2: figs. 5, 6.—Martinez, 1984:39.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. SIKUIJOR.

NOTE.—Drouet (1978:165, 195), after examining the holotype of this species (in W), assigned it to *Anabaina oscillarioides* Bory de Saint-Vincent (= *A. pseudoscillatoria* Bory de Saint-Vincent).

Hormothamnium solutum Bornet and Grunow

Hormothamnium solutum Bornet and Grunow in Bornet and Flahault, 1888 [1886–1888]:259 [lectotype locality: Nouméa, New Caledonia fide

Drouet, 1978:166, 198].—Velasquez, 1955:175, pl. III: fig. 45; 1962a:351, pl. 10: figs. 121, 121a.—Martinez, 1984:39.

PHILIPPINE DISTRIBUTION.—PALAWAN (incl. Cuyo I.).

NOTE.—Drouet, after choosing and examining the lectotype of this species (in PC), assigned it to *Anabaina oscillarioides* Bory de Saint-Vincent (= *A. pseudoscillatoria* Bory de Saint-Vincent).

Family OSCILLATORIACEAE

Hydrocoleum Kützing

Hydrocoleum cantharidosmum (Montagne) Gomont

Lyngbya? *cantharidosma* Montagne, 1841 [1839–1842]:188 [type locality: Islas Canarias].

Hydrocoleum cantharidosmum (Montagne) Gomont, 1890:353.—Velasquez, 1950:319; 1962a:335, pl. 7: fig. 93.—Martinez, 1984:40.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:266, 297), after examining the holotype of this species (in PC), assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Hydrocoleum comoides (Harvey) Gomont

Calothrix comoides Harvey, 1863:lxii [lectotype locality: Port Phillip Heads, Victoria, Australia fide Drouet, 1968:276, 308; 1973:207].

Hydrocoleum comoides (Harvey) Gomont, 1892[1892–1893]:335.—Velasquez, 1962a:335.—Martinez, 1984:40.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—Although Harvey gave Cape Riche [Western Australia] as the only locality for *Calothrix comoides*, he cited two of his collections, numbers 597 and 598. The latter is from Port Phillip Heads and that specimen (in BM) was chosen as lectotype by Drouet, who assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Hydrocoleum glutinosum (C. Agardh) Gomont

Lyngbya glutinosa C. Agardh, 1824:73 [type locality: "In sinu Codano" (Kattegat, between Denmark and Sweden)].

Hydrocoleum glutinosum (C. Agardh) Gomont, 1890:353.—Velasquez, 1950:319; 1962a:334, pl. 7: fig. 92.—Martinez, 1984:40.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:263), incorrectly treating *Lyngbya glutinosa* as a nomenclatural synonym of *Conserva majuscula* Dillwyn (1809 [1802–1809]:40, suppl. pl. A), referred this species to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan on the basis of the Dillwyn type. In fact, C. Agardh (1824:73, 74) cited "*Osc. majuscula*, Lyngb. & fl. D. t. 1549. f. 1" under *Lyngbya glutinosa*, intending this citation to refer to a circumscription (Lyngbye, 1819:91) that

excluded the type of *Conferva majuscula*, which he cited in the synonymy of *Lyngbya crispa* (C. Agardh) C. Agardh, as "*Oscill. majuscula*, Dillw. t. A."

Hydrocoleum lyngbyaceum Kützing

Hydrocoleum lyngbyaceum Kützing, 1849:259 [lectotype locality: Cherbourg, France fide Drouet, 1968:272, 296].—Velasquez, 1950:318.—Agor, 1962:34.—Velasquez, 1962a:336, pl. 7: fig. 94.—Vannajan and Trono, 1977:36, fig. 4.—Fortes, 1981b:396.—Martinez, 1984:40.
Microcoleus lyngbyaceus (Kützing) P. Crouan and H. Crouan, 1867:114.—Drouet, 1968:306–307.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.), Ilocos Sur, Pangasinan, Manila. MINDORO: Oriental Mindoro. CEBU: Sulu: Tawitawi.

NOTE.—Drouet (1968:224–225) placed *Hydrocoleum* and *Lyngbya*, among other genera, in the synonymy of *Microcoleus*. The records for Ilocos Sur, Cebu, and Tawitawi, which were added by Drouet, are based on collections previously reported under *Phormidium ambiguum* (Velasquez, 1962a:306), *Lyngbya confervoides* (Velasquez, 1940:271; 1962a:321), and *L. majuscula* (Velasquez, 1955:167), respectively.

Lyngbya C. Agardh

Lyngbya aestuarii (Mertens) Liebman

Conferva aestuarii Mertens in Jürgens, 1816: decade 2, no. 8 [type locality: "Dynastia Jeverana" (Oldenburg, West Germany)].
Lyngbya aestuarii (Mertens) Liebman, 1839:492.—Velasquez, 1941:193; 1955:166, pl. II: fig. 25; 1962a:317, pl. 3: fig. 65.—Cordero, 1976c:14; 1979b:278; 1981d:62, fig. 2.—Martinez, 1984:41.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Pangasinan, Rizal. PANAY: Aklan. PALAWAN (Cuyo I.).

NOTE.—Drouet (1968:263, 292) chose a specimen in L as the lectotype of this species and assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Lyngbya confervoides C. Agardh

Lyngbya confervoides C. Agardh, 1824:73 [lectotype locality: Spain (probably Cádiz) fide Drouet, 1968:264].—Velasquez, 1940:271; 1950:318.—Agor, 1962:33; Velasquez, 1962a:321, pl. 3: fig. 67.—Reyes, 1978:139, pl. 1: figs. 9, 10.—Saraya and Trono, 1980:6.—Velasquez, 1980:127, table 1.—Fortes, 1981b:396.—Martinez, 1984:41.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro. CEBU: Siquijor.

NOTE.—Drouet (1968:264, 296) chose a specimen in LD as the lectotype of this species and assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Lyngbya ferruginea C. Agardh

Lyngbya ferruginea C. Agardh, 1824:73 [type locality: "In sinu ad Hofmansgave Fioniae" (Fyn, Denmark)].—Dickie, 1877:489.—Velasquez, Trono, and Doty, 1975:152.—Martinez, 1984:42.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

NOTE.—Drouet (1968:264, 292), after examining the holotype of this species (in LD) assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Lyngbya infixa Frémy

Lyngbya infixa Frémy, 1932:1414 [type locality: Banyuls-sur-Mer, Pyrénées-Orientales, France].—Cordero, 1976c:14.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—Drouet (1968:52, 73) chose a specimen in the personal herbarium of J. Feldmann as the lectotype of this species and assigned it to *Schizothrix calcicola* (C. Agardh) Gomont.

Lyngbya lutea (C. Agardh) J.E. Areschoug

Oscillatoria lutea C. Agardh, 1824:68 [type locality: Hålsingborg, Sweden].
Lyngbya lutea (C. Agardh) J.E. Areschoug, 1850:443.—Fortes and Trono, 1980:53.—Martinez, 1984:42.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:185, 188), after examining the holotype of this species (in LD), retained its original disposition, as *Oscillatoria lutea* C. Agardh.

Lyngbya majuscula (Dillwyn) Harvey

Conferva majuscula Dillwyn, 1809 [1802–1809]:40, suppl. pl. A [lectotype locality: England fide Drouet, 1968:263].
Lyngbya majuscula (Dillwyn) Harvey, 1833:370.—Dickie, 1876a:245.—Velasquez, 1940:271; 1950:317; 1955:167, pl. II: fig. 26.—Velasquez and Soriano, 1957:486.—Agor, 1962:33.—Velasquez, 1962a:319, pl. 4: fig. 68; 1971:428, fig. 3.—Cornejo and Velasquez, 1972:171, pl. 1: fig. 1; pl. 4: fig. 28.—Reyes, 1972:135.—Velasquez, Trono, and Doty, 1975:152.—Cordero, 1976c:10, 14, fig. A.—Vannajan and Trono, 1977:37.—Reyes, 1978:139, pl. 1: figs. 7, 8.—Trono, 1978:2.—Saraya and Trono, 1980:6.—Liao and Sotto, 1980:94.—Chan, 1981:387, 389.—Fortes, 1981b:396.—Trono and Ang, 1982:2.—Martinez, 1984:42.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Pangasinan, Bataan, Cavite, Batangas. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. NEGROS: Negros Oriental. CEBU: Siquijor. MINDANAO: Zamboanga. PALAWAN (incl. Bugsuk I., Cuyo I.). SULU: Sulu (Tapul Group), Tawitawi.

NOTE.—Drouet (1968:263, 295) chose a specimen in LD as the lectotype of this species and assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

***Lyngbya martensiana* Meneghini**

Lyngbya martensiana Meneghini, 1837:330 [type locality: Euganean thermal springs, Veneto, Italy].—Agor, 1962:33.—Velasquez, 1980:127, table 1.—Martinez, 1984:43.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:266, 295), after examining the holotype of this species (in FI), assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

***Lyngbya mesotricha* Skuja**

Lyngbya mesotricha Skuja, 1949:54 [type locality: Burma (Rangoon fide Drouet, 1968:54, 87)].—Fortes and Trono, 1980:53.—Martinez, 1984:43.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:54, 87) chose a specimen in PH as the lectotype of this species and assigned it to *Schizothrix calcicola* (C. Agardh) Gomont.

***Lyngbya rosea* W.R. Taylor**

Lyngbya rosea W.R. Taylor, 1928:45, pl. 1: fig. 22 [type locality: Dry Tortugas, Florida, USA].—Vannajan and Trono, 1977:37.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

NOTE.—Drouet (1968:91, 95), after examining the holotype of this species (in the personal herbarium of W.R. Taylor), assigned it to *Schizothrix mexicana* Gomont.

***Lyngbya semiplena* (C. Agardh) J. Agardh**

Calothrix semiplena C. Agardh, 1827:634 [type locality: Trieste, Italy].
Lyngbya semiplena (C. Agardh) J. Agardh, 1842:11.—Agor, 1962:33.—Velasquez, 1962a:319, pl. 3: fig. 66.—Reyes, 1978:140, pl. 1: figs. 11, 12.—Martinez, 1984:44.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro. SQUIJOR.

NOTE.—Drouet (1968:264–265, 295), after examining the holotype of this species (in LD), assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

***Lyngbya sordida* Gomont**

Lyngbya sordida Gomont, 1893[1892–1893]:126, pl. 2: fig. 21 [lectotype locality: Dalmatian coast of Yugoslavia; see Note].—Velasquez, 1940:270; 1962a:316, pl. 3: fig. 64.—Cordero, 1976c:14, fig. B.—Martinez, 1984:44.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.). MINDORO: Oriental Mindoro. CEBU.

NOTE.—Drouet (1968:88) treated *Lyngbya sordida* Gomont as a nomenclatural synonym of *Leibleinia capillacea*

Kützing (1843b:221), which he referred to *Schizothrix mexicana* Gomont. When establishing *Lyngbya sordida*, however, Gomont listed *Leibleinia capillacea* as a *species inquirenda*, so that the two names do not share the same type. For the distribution of *Lyngbya sordida*, Gomont gave several localities in the North Atlantic Ocean and Mediterranean Sea as well as the Antilles and Tonga. When later starting points in Cyanophyceae are abandoned, as in the present catalog, *L. sordida* is seen to be a superfluous name, since Gomont included in its synonymy several legitimate names, the earliest being *Leibleinia polychroa* and *L. violacea*, both published by Meneghini (1844:304) and both transferred to *Lyngbya* by Rabenhorst (1847:83 and 1865:144, respectively). The type specimens of the Meneghini species should be in his herbarium in FI, but Drouet chose specimens distributed by Meneghini and housed in L. We herewith choose the type of *Leibleinia polychroa* as the lectotype of *Lyngbya sordida*. Gomont did not purposely by-pass Meneghini's names; rather, he thought that *Calothrix sordida* Zanardini (1843:63) was an earlier available name. That name was published without a description, however, and is thus invalid. Moreover, *Lyngbya sordida* Gomont is a later homonym of *L. sordida* P. Crouan and H. Crouan (in Mazé and Schramm, 1878:21), based on *Leibleinia sordida* Kützing (1845:179), an illegitimate substitute name for *Calothrix luteofusca* C. Agardh (1827:635).

Microcoleus Desmazières***Microcoleus acutissimus* Gardner**

Microcoleus acutissimus Gardner, 1927a:55, pl. 11: fig. 2 [type locality: Sabana Grande, Puerto Rico].—Velasquez, 1962a:332, pl. 6: figs. 89, 89a.—Fortes and Trono, 1980:54.—Fortes, 1981b:396.—Martinez, 1984:47.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:135, 139), after examining the holotype of this species (in NY), assigned it to *Schizothrix tenerrima* (Gomont) Drouet.

***Microcoleus tenerrimus* Gomont**

Microcoleus tenerrimus Gomont, 1892[1892–1893]:355, pl. 14: figs. 9–11 [lectotype locality: Guadeloupe fide Drouet, 1968:135, 139].
Schizothrix tenerrima (Gomont) Drouet, 1968:135 [including Philippine record on page 140].

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—This record (Velasquez 723) had previously been published under *Microcoleus acutissimus* (Velasquez, 1962a:332).

Oscillatoria Vaucher*Oscillatoria bonnemaisonii* (P. Crouan and H. Crouan)
P. Crouan and H. Crouan

Oscillaria bonnemaisonii P. Crouan and H. Crouan in Desmazières, 1858: no. 537 [type locality: passage de Plougastel, Finistère, France].
Oscillaria bonnemaisonii (P. Crouan and H. Crouan) P. Crouan and H. Crouan, 1860:371.—Velasquez, 1950:315; 1962a:288, pl. 1: fig. 16.—Cordero, 1976c:10, 15, figs. c, d.—Velasquez, 1980:127, table 1.—Martinez, 1984:57.

PHILIPPINE DISTRIBUTION.—BATANES. MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:274, 296) chose a specimen in PC as the lectotype of this species and assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Oscillatoria corallinae (Kützing) Gomont

Leibleinia corallinae Kützing, 1849:276 [type locality: "ad oras gallicas boreales" (Arromanches-les-Bains, Calvados, France fide Drouet, 1968:272, 296)].
Oscillatoria corallinae (Kützing) Gomont, 1893[1892–1893]:218.—Velasquez, 1962a:288, pl. 1: fig. 17.—Fortes, 1981b:396.—Martinez, 1984:59.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan. MINDANAO: Zamboanga.

NOTE.—Drouet (1968:272, 296), after examining the holotype of this species (in L), assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Oscillatoria curviceps C. Agardh

Oscillatoria curviceps C. Agardh, 1824:68 [type locality: "In stagnis Scaniae" (near Lund, Sweden fide Drouet, 1968:264, 291)].—Fortes and Trono, 1980:52.—Fortes, 1981b:396.—Martinez, 1984:59.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:264, 291), after examining the holotype of this species (in LD), assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Oscillatoria margaritifera (Kützing) Gomont

Oscillaria margaritifera Kützing, 1847b:31, pl. 43: fig. X [type locality: Calvados, France].
Oscillatoria margaritifera (Kützing) Gomont, 1893[1892–1893]:216.—Velasquez, 1962a:293, pl. 2: fig. 23.—Vannajan and Trono, 1977:36, fig. 1b.—Saraya and Trono, 1980:6.—Chan, 1981:387, 389.—Martinez, 1984:62.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite. MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:270, 296), after examining the holotype of this species (in L), assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Oscillatoria nigroviridis Thwaites

Oscillatoria nigroviridis Thwaites in Harvey, 1849 [1847–1851]: pl. CCLI:A ["*nigro-viridis*"] [type locality: Shirehampton near Bristol, England].—Velasquez, 1962a:293, pl. 2: fig. 24.—Fortes and Trono, 1980:52.—Fortes, 1981b:396.—Martinez, 1984:63.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal. MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:145, 154) chose a specimen in K (now in BM) as the lectotype of this species and assigned it to *Porphyrosiphon notarisii* (Meneghini) Kützing.

Oscillatoria sancta (Kützing) Gomont

Oscillaria sancta Kützing, 1847b:30, pl. 42: fig. VII [type locality: "In der 'Acqua santa'" (near Roma, Italy fide Drouet, 1968:270, 294)].
Oscillatoria sancta (Kützing) Gomont, 1893[1892–1893]:209.—Fortes and Trono, 1980:53, fig. 1.—Fortes, 1981b:396.—Martinez, 1984:65.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:270, 294), after examining the holotype of this species (in L), assigned it to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Phormidium Kützing*Phormidium ambiguum* Gomont

Amphithrix amoena Kützing, 1843b:220 [type locality: Nordhausen, East Germany].
Phormidium ambiguum Gomont, 1893[1892–1893]:178, pl. 5: fig. 10.—Velasquez, 1962a:306, pl. 3: fig. 50.—Martinez, 1984:68.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Sur.

NOTE.—*Phormidium ambiguum* was proposed as a substitute name for *Amphithrix amoena* Kützing in consideration of the prior existence of *P. amoenum* Kützing (1843b:192). Drouet (1968:232, 246), after examining the holotype of *A. amoena* (in L), assigned it to *Microcoleus vaginatus* (Vaucher) Gomont. The Ilocos Sur record, however, was referred by Drouet (1968:307) to *Microcoleus lyngbyaceus* (Kützing) P. Crouan and H. Crouan.

Phormidium crosbyanum Tilden

Phormidium crosbyanum Tilden, 1909: no. 645 [type locality: Waianae, Oahu, Hawaiian Is.].—Velasquez, 1940:271; 1950:316; 1955:165, pl. I: fig. 20; 1962a:304, pl. 2: fig. 46; 1971:427, fig. 2.—Reyes, 1972:135.—Velasquez, Trono, and Doty, 1975:159.—Cordero, 1976c:10, 15; 1981d:63, fig. 3.—Martinez, 1984:68.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. MINDORO: Oriental Mindoro. PANAY: Aklan. NEGROS: Negros Oriental. SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—Drouet (1968:48, 83), after examining the holotype of this species (in MIN), assigned it to *Schizothrix calcicola* (C. Agardh) Gomont.

***Phormidium laysanense* Lemmermann**

Phormidium laysanense Lemmermann, 1905:619, pl. VII: figs. 4, 5 [type locality: Laysan Islet, Hawaiian Is.].—Agor, 1962:33.—Martinez, 1984:69.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—Drouet (1968:213), on the basis of the original description, assigned this species to *Oscillatoria erythraea* (Ehrenberg) Drouet. Although the latter species (better known as *Trichodesmium erythraeum* Ehrenberg) is generally planktonic, Agor (l.c.) reported his material as being epiphytic on brown algae.

***Phormidium penicillatum* Gomont**

Phormidium penicillatum Gomont, 1893:LXXXVIII, pl. IV: figs. 5–7; in Jadin, 1893:CLIX [*"penicellatum"*] [type locality: Saint-Gilles, Réunion].—Velasquez, 1962a:306.—Martinez, 1984:70.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.). MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:204, 212), after examining the holotype of this species (in PC), assigned it to *Oscillatoria submembranacea* (Ardissone and Strafforello) Drouet.

***Phormidium persicinum* (Reinke) Gomont**

Lyngbya persicina Reinke, 1889:91 [type locality: Kieler Bucht, West Germany].

Phormidium persicinum (Reinke) Gomont, 1893[1892–1893]:164.—Velasquez, 1962a:301, pl. 2: fig. 41.—Reyes, 1978:139, pl. 1: figs. 5, 6.—Martinez, 1984:70.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. SQUIJOR.

NOTE.—Drouet (1968:43, 68) chose a specimen in PC as the lectotype of this species and assigned it to *Schizothrix calcicola* (C. Agardh) Gomont.

***Phormidium submembranaceum*
(Ardissone and Strafforello) Gomont**

Oscillaria submembranacea Ardissone and Strafforello, 1877:65 [type locality: Porto Maurizio, Liguria, Italy].

Phormidium submembranaceum (Ardissone and Strafforello) Gomont, 1893[1892–1893]:180.

Oscillatoria submembranacea (Ardissone and Strafforello) Drouet, 1968:203 [including Philippine records on page 212].

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.). MINDORO: Oriental Mindoro.

NOTE.—These records were previously published as *Phormidium penicillatum* Gomont by Velasquez (1962a:306).

***Phormidium tinctorium* Kützing**

Phormidium tinctorium Kützing, 1847b:35, pl. 49: fig. III [type locality: Falaise, Calvados, France].—Cornejo and Velasquez, 1972:171, pl. 1: fig. 2.—Velasquez, Trono, and Doty, 1975:159.—Martinez, 1984:71.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

NOTE.—Drouet (1968:100, 105), after examining the holotype of this species (in L), assigned it to *Schizothrix friesii* (C. Agardh) Gomont.

***Phormidium valderiae* (Delponte) Schmidle**

Leptothrix valderiae Delponte in Garelli, 1857:35 [*"valderia"*] [type locality: Valdieri, Piemonte, Italy].

Phormidium valderiae (Delponte) Schmidle, 1901:100, footnote.

Phormidium valderianum Gomont, 1893[1892–1893]:167.—Velasquez, 1955:164, pl. I: fig. 19; 1962a:305, pl. 3: fig. 48.—Martinez, 1984:72.

PHILIPPINE DISTRIBUTION.—PALAWAN.

NOTE.—*Phormidium valderianum* was proposed as a substitute name for *Leptothrix valderiae*. When later starting points are abandoned, the correct name for this species becomes *P. valderiae*. Drouet (1968:38, 71) chose a specimen in PC as the lectotype of this species and assigned it to *Schizothrix calcicola* (C. Agardh) Gomont.

Schizothrix Kützing***Schizothrix mexicana* Gomont**

Schizothrix mexicana Gomont, 1892[1892–1893]:304 [type locality: Rio Guatulco, Oaxaca, Mexico].—Drouet, 1968:98.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. CEBU.

NOTE.—The Mindoro records (Velasquez 871, 988) had previously been published under *Lyngbya majuscula* (Velasquez, 1962a:320) and *L. sordida* (Velasquez, 1962a:317), respectively.

Sirocoleum Kützing***Sirocoleum kurzii* (Zeller) Gomont**

Chthonoblastus kurzii Zeller, 1873:178 [type locality: Elephant Point, Pegu, Burma].

Sirocoleum kurzii (Zeller) Gomont, 1892[1892–1893]:349.

Porphyrosiphon kurzii (Zeller) Drouet, 1968:162 [including Philippine record on page 164].

PHILIPPINE DISTRIBUTION.—LUZON: Rizal.

Spirulina Turpin***Spirulina major* Kützing**

Spirulina major Kützing, 1843b:183 [lectotype locality: Weissenfels, East Germany fide Drouet, 1968:17, 20].—Velasquez, 1980:127, table 1.—Martinez, 1984:82.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1968:17, 20) chose a specimen in L as the lectotype of this species and assigned it to *Spirulina subsalsa* Oersted.

Symploca Kützing***Symploca howei* Gardner**

Symploca howei Gardner, 1932:283, fig. 1, pl. 2: fig. 9 [type locality: Cayo Don Luis near Point Montalva, Puerto Rico].—Velasquez and Soriano, 1957:486.—Reyes, 1972:135.—Velasquez, Trono, and Doty, 1975:163.—Reyes, 1978:140, pl. 2: fig. 1, 2.—Martinez, 1984:85.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental. SQUIJOR.

NOTE.—Drouet (1968:92, 95), after examining the holotype of this species (in NY), assigned it to *Schizothrix mexicana* Gomont.

***Symploca hydroides* (Harvey) Kützing**

Calothrix hydroides Harvey, 1833:368 [type locality: Appin, Argyll, Scotland].

Symploca hydroides (Harvey) Kützing, 1849:272.—Velasquez, 1962a:312, pl. 3: fig. 59.—Reyes, 1972:136.—Velasquez, Trono, and Doty, 1975:164.—Reyes, 1978:140, pl. 1: figs. 13, 14.—Saraya and Trono, 1980:7.—Liao and Sotto, 1980:94.—Martinez, 1984:85.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.), Pangasinan. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental. CEBU. SQUIJOR.

NOTE.—Drouet (1968:310; 1973:177, 185) chose a specimen in LD as the lectotype of this species and assigned it to *Calothrix crustacea* Thuret.

***Symploca laeteviridis* Gomont**

Symploca laeteviridis Gomont, 1893[1892–1893]:109, pl. 2: figs. 6–8 [type locality: Key West, Florida, USA].—Velasquez, 1955:168, pl. II: fig. 28; 1962a:311, pl. 3: fig. 58.—Martinez, 1984:85.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. SULU: Tawitawi.

NOTE.—Drouet (1968:111, 118), after examining the holotype of this species (in PC), assigned it to *Schizothrix arenaria* (Berkeley) Gomont.

Family RIVULARIACEAE***Calothrix* C. Agardh*****Calothrix aeruginea* (Kützing) Thuret**

Leibleinia aeruginea Kützing, 1843b:221 [type locality: Trieste, Italy].
Calothrix aeruginea (Kützing) Thuret, 1875:381.—Fortes and Trono, 1980:54, fig. 2.—Fortes, 1981b:396.—Martinez, 1984:28.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1973:168, 184), after examining the holotype of this species (in L), assigned it to *Calothrix crustacea* Thuret.

***Calothrix confervicola* (Dillwyn) C. Agardh**

Conferva confervicola Dillwyn, 1802 [1802–1809]: pl. 8 [lectotype locality: Aberystwyth, Wales fide Drouet, 1973:164].

Calothrix confervicola (Dillwyn) C. Agardh, 1824:70.—Velasquez, 1962a:353, pl. 10: fig. 125.—Martinez, 1984:28.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.).

NOTE.—Drouet (1973:163–164) chose a specimen in OXF as the lectotype of this species and assigned it to *Calothrix crustacea* Thuret.

***Calothrix contarenii* (Zanardini) Bornet and Flahault**

Rivularia contarenii Zanardini, 1840a:134 [lectotype locality: Venezia, Italy fide Drouet, 1973:167, 184].

Calothrix contarenii (Zanardini) Bornet and Flahault, 1886a [1886–1888]:355.—Saraya and Trono, 1980:7.—Martinez, 1984:29.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—Drouet (1973:166–167, 184) chose a specimen in PC as the lectotype of this species and assigned it to *Calothrix crustacea* Thuret.

***Calothrix crustacea* Thuret**

Calothrix crustacea Thuret in Bornet and Thuret, 1876:13, pl. IV: figs. 1–6 [lectotype locality: Tangiers, Morocco fide Drouet, 1973:175, 186].—Fan, 1956:176.—Drouet, 1973:194.—Martinez, 1984:29.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.), Ilocos Sur. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. PALAWAN. SULU: Tawitawi.

NOTE.—These records have also been reported as follows: Cagayan under *Calothrix confervicola* (Velasquez, 1962a:353), Ilocos Sur under *C. parietina* (Fan, 1956:168), Oriental Mindoro (Velasquez 1076) under *Brachytrichia maculans* (Velasquez, 1962a:356), Palawan under *Rivularia bullata* (Velasquez, 1962a:355), and Tawitawi under *Calothrix pilosa* (Velasquez, 1955:181).

***Calothrix epiphytica* W. West and G.S. West**

Calothrix epiphytica W. West and G.S. West, 1897:240 [type locality: Mossâmedes, Angola].—Cornejo and Velasquez, 1972:172, pl. 1: fig. 6.—Velasquez, Trono, and Doty, 1975:130.—Martinez, 1984:29.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

NOTE.—Drouet (1973:121, 150) chose a specimen in UC as the lectotype of this species and assigned it to *Calothrix parietina* (Nägeli ex Kützing) Thuret.

***Calothrix parietina* (Nägeli ex Kützing) Thuret**

Schizosiphon parietinus Nägeli ex Kützing, 1849:327 [type locality: Zürich, Switzerland].

Calothrix parietina (Nägeli ex Kützing) Thuret, 1875:381.—Fan, 1956:168.—Martinez, 1984:29.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Sur.

NOTE.—This record has also been reported under *Phoridium ambiguum* (Velasquez, 1962a:306) and *Calothrix crustacea* (Drouet, 1973:194).

Calothrix pilosa Harvey

Calothrix pilosa Harvey, 1858:106, pl. XLVIII.c [type locality: Key West, Florida, USA].—Velasquez, 1940:269; 1950:323; 1955:181, pl. V: figs. 57a, 57b.—Fan, 1956:171–172.—Velasquez, 1962a:353, pl. 10: figs. 123, 123a.—Martinez, 1984:29.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon. MINDORO: Oriental Mindoro. LEYTE (Biliran I.). SULU: Tawitawi.

NOTE.—Drouet (1973:39, 77) chose a specimen in K (in BM) as the lectotype of this species and assigned it to *Scytonema hofmannii* C. Agardh [= *S. hofman-bangii* C. Agardh].

Calothrix robusta Setchell and Gardner

Calothrix robusta Setchell and Gardner in Gardner, 1918:473, pl. 40: fig. 22 [type locality: Cypress Point, Monterey County, California, USA].—Velasquez, 1950:324.—Martinez, 1984:30.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1973:177, 190), after examining the holotype of this species (in UC), assigned it to *Calothrix crustacea* Thuret.

Calothrix scopulorum (Weber and Mohr) C. Agardh

Conferva scopulorum Weber and Mohr, 1804:195, pl. 3: fig. 3 [type locality: Varberg, Sweden].

Calothrix scopulorum (Weber and Mohr) C. Agardh, 1824:70.—Fortes and Trono, 1980:54.—Fortes, 1981b:396.—Martinez, 1984:30.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1973:164, 183) chose a specimen in K (in BM) as the lectotype of this species and assigned it to *Calothrix crustacea* Thuret.

Calothrix viguieri Frémy

Calothrix viguieri Frémy, 1930:252, fig. 226 [type locality: Gabon].—Cornejo and Velasquez, 1972:172, pl. 1: fig. 5.—Velasquez, Trono, and Doty, 1975:130.—Martinez, 1984:30.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

NOTE.—Drouet (1973:131), on the basis of the original description, assigned this species to *Calothrix parietina* (Nägeli ex Kützing) Thuret.

Dichothrix Zanardini

Dichothrix gypsophila (Kützing) Bornet and Flahault

Schizosiphon gypsophilus Kützing, 1843b:234, pl. 6: fig. II [type locality: "An Gypswänden des südlichen Harzes" (Sachswerfen, near Nordhausen, East Germany fide Drouet, 1973:104)].

Dichothrix gypsophila (Kützing) Bornet and Flahault, 1886a [1886–1888]:377.—Cornejo and Velasquez, 1972:172, pl. 1: fig. 4.—Velasquez, Trono, and Doty, 1975:140.—Martinez, 1984:35.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

NOTE.—Drouet (1973:103–104, 145), after examining the holotype of this species (in L), assigned it to *Calothrix parietina* (Nägeli ex Kützing) Thuret.

Gardnerula De Toni f.

Gardnerula corymbosa (Harvey) De Toni f.

Microcoleus corymbosus Harvey, 1858:109, pl. XLVIII.b [type locality: Key West, Florida, USA].

Gardnerula corymbosa (Harvey) De Toni f., 1936:[5].—Velasquez, 1940:270; 1950:327; 1962a:355, pl. 10: figs. 128, 128a, 128b.—Reyes, 1978:142, pl. 2: figs. 14–17.—Martinez, 1984:37.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon. MINDORO: Oriental Mindoro. SQUIJOR.

NOTE.—Drouet (1973:173, 189), after examining the holotype of this species (in TCD), assigned it to *Calothrix crustacea* Thuret.

Rivularia C. Agardh

Rivularia bullata (Poiret) Berkeley

Ulva bullata Poiret, 1808:175 [type locality: Siriac, Bretagne, France].

Rivularia bullata (Poiret) Berkeley, 1833:8.—Velasquez, 1962a:355, pl. 10: fig. 127.—Reyes, 1978:141, pl. 2: figs. 12, 13.—Martinez, 1984:75.

PHILIPPINE DISTRIBUTION.—SQUIJOR. PALAWAN.

NOTE.—Drouet (1973:165, 185), after examining the holotype of this species (in PC), assigned it to *Calothrix crustacea* Thuret.

Rivularia mesenterica (Kützing) Thuret

Heteractis mesenterica Kützing, 1843b:236 [type locality: Pula, Yugoslavia].

Rivularia mesenterica (Kützing) Thuret, 1875:382.—Reyes, 1978:141, pl. 2: figs. 7–9.—Martinez, 1984:76.

PHILIPPINE DISTRIBUTION.—SQUIJOR.

NOTE.—Drouet (1973:168–169, 184), after examining the holotype of this species (in L), assigned it to *Calothrix crustacea* Thuret.

Rivularia nitida C. Agardh

Rivularia nitida C. Agardh, 1812 [1810–1812]:44 [type locality: Stockholm, Sweden].—Fortes and Trono, 1980:55, fig. 3.—Fortes, 1981b:396.—Martinez, 1984:76.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1973:165, 183), being unable to find original material of this species, chose a specimen in LD (from Båstad, Sweden) as a neotype and assigned it to *Calothrix crustacea* Thuret.

Rivularia polyotis (J. Agardh) Hauck

Diplotrichia polyotis J. Agardh, 1842:10 [type locality: Pag I., Yugoslavia].
Rivularia polyotis (J. Agardh) Hauck, 1884 [1883–1885]:495.—Reyes, 1978:141, pl. 2: figs. 10, 11.—Martinez, 1984:76.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

NOTE.—Drouet (1973:167–168, 184), after examining the holotype of this species (in LD), assigned it to *Calothrix crustacea* Thuret.

Family SCYTONEMATACEAE

Scytonema C. Agardh

Scytonema hofman-bangii C. Agardh

Scytonema hofman-bangii C. Agardh, 1812 [1810–1812]:39 [*“hoffman-bangii”*] [type locality: Jäder, Västmanland, Sweden].
Scytonema hofmannii C. Agardh, 1817:117 [*“hofmannii”*].—Velasquez, 1950:325; 1962a:363, pl. 12: fig. 138.—Drouet, 1973:91–92.—Martinez, 1984:79.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon. MINDORO: Oriental Mindoro.

NOTE.—*Scytonema hofmannii* was proposed as a substitute name for *S. hofman-bangii*. Both epithets commemorate the Danish botanist, Niels Hofman Bang (for whom the red alga *Bangia* is also named), so that neither is correctly spelled. When later starting points are abandoned, the correct name for this species becomes *Scytonema hofman-bangii*. The Quezon record was previously published under *Calothrix pilosa* (Velasquez, 1940:270).

Order STIGONEMATALES

Family MASTIGOCLADACEAE

Brachytrichia Zanardini

Brachytrichia maculans Gomont

Brachytrichia maculans Gomont, 1901:210, pl. 5: figs. 5–7 [type locality: Lem Dan, Ko Chang Archipelago, Thailand].—Velasquez, 1962a:356.—Martinez, 1984:28.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Drouet (1973:177, 194), after examining the holotype of this species (in PC), assigned it to *Calothrix crustacea* Thuret.

Brachytrichia quoyi (C. Agardh) Bornet and Flahault

Nostoc quoyi C. Agardh, 1824:22 [*“quoyi”*] [type locality: Mariana Is.].
Brachytrichia quoyi (C. Agardh) Bornet and Flahault, 1886b [1886–1888]:373.—Velasquez, 1940:270; 1950:325; 1955:180, pl. V: fig. 55.—Velasquez and Soriano, 1957:486.—Velasquez, 1962a:356, pl. 11: fig. 129.—Villones and Magdamo, 1968:11, fig. 2.—Velasquez, 1971:428, fig. 4.—Reyes, 1972:135.—Velasquez, Trono, and Doty, 1975:130.—Drouet, 1981:107.—Fortes, 1981b:396.—Cordero, 1984a:69.—Marcos-Agngarayngay, 1983:65, fig. 3.—Cordero, 1984b:57.—Martinez, 1984:28.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Ilocos Sur, Batangas, Quezon, Albay. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental. PALAWAN (incl. Cuyo I.).

RECONCILIATION WITH THE DROUETIAN SYSTEM

Philippine Cyanophyceae arranged according to the Drouetian classification (synonyms indented beneath accepted names):

Order Chroococcales

Family Chamaesiphonaceae

Entophysalis conferta (Kützinger) Drouet and Daily

Family Chroococcaceae

Anacystis aeruginosa (Zanardini) Drouet and Daily

Order Hormogonales

Family Nostocaceae

Anabaina oscillarioides Bory de Saint-Vincent

Anabaina pseudoscillatoria Bory de Saint-Vincent

Hormothamnium enteromorphoides Grunow

H. solutum Bornet and Grunow

Calothrix crustacea Thuret

Brachytrichia maculans Gomont

Calothrix aeruginea (Kützinger) Thuret

C. confervicola (Dillwyn) C. Agardh

C. contarenii (Zanardini) Bornet and Flahault

C. robusta Setchell and Gardner

C. scopulorum (Weber and Mohr) C. Agardh

Gardnerula corymbosa (Harvey) De Toni f.

Rivularia bullata (Poiret) Berkeley

R. mesenterica (Kützinger) Thuret

R. nitida C. Agardh

R. polyotis (J. Agardh) Hauck

Symploca hydroides (Harvey) Kützinger

Calothrix parietina (Nägeli ex Kützinger) Thuret

Calothrix epiphytica W. West and G.S. West

C. viguieri Frémy

Dichothrix gypsophila (Kützinger) Bornet and Flahault

Scytonema hofmannii C. Agardh [= *S. hofman-bangii* C. Agardh]

Calothrix pilosa Harvey

Family Oscillatoriaceae

Microcoleus lyngbyaceus (Kützinger) P. Crouan and H. Crouan

Hydrocoleum lyngbyaceum Kützinger

H. cantharidosmum (Montagne) Gomont

H. comoides (Harvey) Gomont

H. glutinosum (C. Agardh) Gomont

Lyngbya aestuarii (Mertens) Lieberman

L. confervoides C. Agardh

L. ferruginea C. Agardh

L. majuscula (Dillwyn) Harvey

- L. martensiana* Meneghini
L. semiplena (C. Agardh) J. Agardh
Oscillatoria bonnemaisonii (P. Crouan and H. Crouan)
 P. Crouan and H. Crouan
O. corallinae (Kützing) Gomont
O. curviceps C. Agardh
O. margaritifera (Kützing) Gomont
O. sancta (Kützing) Gomont
M. vaginatus (Vaucher) Gomont
 Phormidium ambiguum Gomont
Oscillatoria erythrea (Ehrenberg) Drouet
 Phormidium laysanense Lemmermann
O. lutea C. Agardh
 Lyngbya lutea (C. Agardh) J.E. Areschoug
O. submembranacea (Ardissonne and Strafforello) Drouet
 Phormidium submembranaceum (Ardissonne and Strafforello) Gomont
 P. penicillatum Gomont
Porphyrosiphon kurzii (Zeller) Drouet
 Sirocoleum kurzii (Zeller) Gomont
P. notarisii (Meneghini ex Kützing) Kützing
 Oscillatoria nigroviridis Thwaites

Schizothrix arenaria (Berkeley) Gomont
 Symploca laeteviridis Gomont
S. calcicola (C. Agardh) Gomont
 Lyngbya infixa Frémy
 L. mesotricha Skuja
 Phormidium crosbyanum Tilden
 P. persicinum (Reinke) Gomont
 P. valderiae (Delponte) Schmidle
S. friesii (C. Agardh) Gomont
 Phormidium tinctorium Kützing
S. mexicana Gomont
 Lyngbya rosea W.R. Taylor
 L. sordida Gomont [uncertain; see entry in Catalog]
 Symploca howei Gardner
S. tenerrima (Gomont) Drouet
 Microcoleus tenerrimus Gomont
 M. acutissimus Gardner
 Spirulina subsalsa Oersted
 Spirulina major Kützing
 Family Stigonemataceae
 Brachytrichia quoyi (C. Agardh) Bornet and Flahault

Class RHODOPHYCEAE

Subclass BANGIOPHYCIDAE

Order GONIOTRICHALES

Family GONIOTRICHACEAE

Chroodactylon Hansgirg

Chroodactylon ornatum (C. Agardh) Basson

Conserva ornata C. Agardh, 1824:104 [type locality: Lake Mälaren, Stockholm, Sweden].

Asterocystis ornata (C. Agardh) Hamel, 1924:451.—Meñez and Calumpong, 1981:380 ["*Asterocystis*"].—Saraya and Trono, 1982:25.

Chroodactylon ornatum (C. Agardh) Basson, 1979:67.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CENTRAL VISAYAS.

Goniotrichum Kützing

Goniotrichum alsidii (Zanardini) Howe

Bangia alsidii Zanardini, 1840a:136 [type locality: Trieste, Italy].

Goniotrichum alsidii (Zanardini) Howe, 1914:75.—Meñez and Calumpong, 1981:380.

Bangia elegans Chauvin, 1842:33 [type locality: Arronanches-les-Bains, Calvados, France].

Goniotrichum elegans (Chauvin) Zanardini, 1847:249.—Weber-van Bosse, 1921:187.—Velasquez, Trono, and Doty, 1975:146.—Chan, 1981:387.—Saraya and Trono, 1982:25, pl. I: fig. 1.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CENTRAL VISAYAS. SULU: Tawitawi (Sangasiapu I.)

NOTE.—The conspecificity of *Bangia alsidii* and *Goniotrichum elegans* was proposed by Zanardini (1873:457), who, however, considered *B. alsidii* a variety of *G. elegans*. The varietal distinction is not usually recognized, but if it is, *G. elegans* must be subordinated to *G. alsidii*.

Order BANGIALES

Family ERYTHROPELTIDACEAE

Erythrocladia Rosenvinge

Erythrocladia irregularis Rosenvinge

Erythrocladia irregularis Rosenvinge, 1909:72, figs. 11, 12 [type locality: Møllegrund off Hirshals, Denmark].

Erythrocladia subintegra Rosenvinge, 1909:73, figs. 13, 14 [syntype localities: two, off Hirshals, Denmark].—Vannajan and Trono, 1978:15, fig. 14.—Saraya and Trono, 1982:26.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Manila.

NOTE.—The conspecificity of *Erythrocladia irregularis* and *E. subintegra* was proposed by Heerebout (1968:141). The latter species was treated as a forma of *E. irregularis* by Garbary, Hansen, and Scagel (1981:154).

Erythrocladia pinnata W.R. Taylor

Erythrocladia pinnata W.R. Taylor, 1942:75, pl. 2: figs. 1, 2 [type locality: Tobago I., West Indies].—Meñez and Calumpong, 1981:380.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

Erythrotrichia J.E. Areschoug

Erythrotrichia bangioides Levring

Erythrotrichia bangioides Levring, 1955:410, fig. 1 [syntype localities: various, all in New Zealand].—Saraya and Trono, 1982:26.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Erythrotrichia biseriata Tanaka

Erythrotrichia biseriata Tanaka, 1944:86, fig. 8 [syntype localities: Kashoto, Taiwan; Hachijo-jima, Japan].—Cordero, 1977a:33, figs. 1, 2.—Saraya and Trono, 1982:26.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas.

Erythrotrichia parietalis Tanaka

Erythrotrichia parietalis Tanaka, 1952:18, fig. 10 [type locality: Takamatsu, Japan].—Cordero, 1977a:34, fig. 3.—Fortes, 1981b:396.—Meñez and Calumpong, 1981:380.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite (Corregidor I.). CENTRAL VISAYAS.

Family BANGIACEAE

Bangia Lyngbye

Bangia atropurpurea (Roth) C. Agardh

Conserva atropurpurea Roth, 1806:208, pl. VI [type locality: Bremen, West Germany].

Bangia atropurpurea (Roth) C. Agardh, 1824:76.

Conserva fuscopurpurea Dillwyn, 1807 [1802–1809]: pl. 92 ["*fusco-purpurea*"] [type locality: Dunraven Castle, Glamorganshire, Wales].

Bangia fuscopurpurea (Dillwyn) Lyngbye, 1819:83, pl. 24:c.—Meñez and Calumpo, 1981:380.—Calumpo, 1982:145.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental (Apo I.).

NOTE.—The conspecificity of *Bangia fuscopurpurea* (marine) and *B. atropurpurea* (freshwater) was proposed by den Hartog (1972) and Geesink (1973).

Bangia yamadae Tanaka

Bangia yamadae Tanaka, 1944:84, figs. 6, 7 ["yamadai"] [type locality: Hoko-to (P'eng-hu), Taiwan].—Cordero, 1977a:34, figs. 4, 5.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite (Corregidor I.).

NOTE.—In forming an epithet intended to commemorate a personal name ending in the letter *a*, the letter *e* is added regardless of gender. Thus Yamada yields *yamadae* and Okamura yields *okamurae* (used in several species in this catalog).

Porphyra C. Agardh

Porphyra atropurpurea (Olivi) De Toni

Ulva atropurpurea Olivi, 1794:153, pls. I–III ["atro-purpurea"] [type locality: Venezia, Italy].

Porphyra atropurpurea (Olivi) De Toni, 1897:17.—Zaneveld, 1956:24; 1959:105.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos.

Porphyra crispata Kjellman

Porphyra crispata Kjellman, 1897a:15, pl. 1: figs. 4, 5; pl. 3: figs. 5–7; pl. 5: fig. 15 [type locality: Goto, Japan].—Domantay, 1962:293.—Galutira and Velasquez, 1964:501, pl. 3: figs. 8a–c; pl. 7: figs. 27a,b.—Velasquez, 1968a:121, fig. 6.—De Leon and Domantay, 1971:5, 8.—Velasquez, 1971:446, fig. 25; 1972:63.—Cordero, 1974c:138, fig. 2.—Velasquez, Trono, and Doty, 1975:161.—Cordero, 1977a:36, figs. 6–8; 1979a:21, fig. 1.—Velasquez, 1979b:230.—Cordero, 1980b:38, fig. 4.—Trono and Fortes, 1980:67.—Trono, Velasquez, and Guevarra, 1980:78.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:149.—Cordero,

1984a:86.—Marcos-Agngarayngay, 1984a:17; 1984b:124.—Tungpalan, 1984:140.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan, Batangas.

Porphyra denticulata Levring

Porphyra denticulata Levring, 1953:467, figs. 5, 6A–C [syntype localities: various, all in Queensland, Australia].—Quisumbing, 1951:1011.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte.

**Porphyra marcosii* Cordero

Porphyra marcosii Cordero, 1976b:15, figs. A–H, pl. 1 [type locality: Dirique Bay, Burgos, Ilocos Norte Prov., Luzon].—Cordero, 1974c:139, fig. 4 [*Porphyra* sp.]; 1977a:36, figs. 9, 9a, pl. 1:A; 1979a:22, fig. 2; 1980b:38, fig. 5, pl. 25; 1984a:87.—Marcos-Agngarayngay, 1984a:19; 1984b:124.—Tungpalan, 1984:140.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

Porphyra suborbiculata Kjellman

Porphyra suborbiculata Kjellman, 1897a:10, pl. 1: figs. 1–3; pl. 2: figs. 5–9; pl. 5: figs. 4–7 [type locality: Goto, Japan].—Cordero, 1974c:138, fig. 3; 1977a:37, figs. 10, 11; 1979a:23, fig. 3; 1980b:39, fig. 6, pls. 26, [55].—Trono and Fortes, 1980:67.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:149.—Cordero, 1984a:86.—Marcos-Agngarayngay, 1984a:19, fig. 14; 1984b:124.—Tungpalan, 1984:140.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte, Cavite (Corregidor I.).

Porphyra variegata (Kjellman) Kjellman

Diploderma variegatum Kjellman, 1889:33, pl. II: figs. 1–4 [type locality: Bering I., USSR].

Porphyra variegata (Kjellman) Kjellman in Hus, 1900:69.—Velasquez et al., 1973:25, pl. 9: fig. 43.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan.

Subclass FLORIDEOPHYCIDAE

Order ACROCHAETIALES

Family ACROCHAETIACEAE

Deliberations leading to the choice of the classification of acrochaetioid algae employed here are given in the appended Nomenclatural Notes.

Acrochaetium Nägeli

Acrochaetium gracile Børgesen

Acrochaetium gracile Børgesen, 1915:26, figs. 19, 20 [type locality: St. Thomas, Virgin Is.].—Abbott, 1962:115, fig. 17.—Velasquez, Trono, and Doty, 1975:126.—Cordero, 1977a:38, fig. 12.—Vannajan and Trono, 1978:15.—Chan, 1981:387.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite. PALAWAN (Balabac I.).

***Acrochaetium hallandicum* (Kylin) Hamel**

Chantransia hallandica Kylin, 1906:123, fig. 8 [type locality: Halland coast of Sweden].

Acrochaetium hallandicum (Kylin) Hamel, 1927:20, 82.

Acrochaetium sargassi Børgesen, 1915: 17, figs. 7–10 [type locality: St. Thomas, Virgin Is.].—Meñez and Calumpong, 1981:380.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

NOTE.—The conspecificity of *Chantransia hallandica* and *Acrochaetium sargassi* was proposed by Woelkerling (1973:84).

***Acrochaetium hancockii* (Dawson) Papenfuss**

Rhodochorton hancockii Dawson, 1944:255, pl. 41: figs. 4–6 [type locality: Puerto Refugio, Isla Ángel de la Guarda, Baja California Norte, Mexico].

Acrochaetium hancockii (Dawson) Papenfuss, 1945:306.—Cornejo and Velasquez, 1972:178, pl. 2: fig. 16; pl. 4: fig. 33.—Velasquez, Trono, and Doty, 1975:126.—Saraya and Trono, 1982:27, pl. I: fig. 2.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas.

***Acrochaetium liagorae* Børgesen**

Acrochaetium liagorae Børgesen, 1915:57, figs. 60–62 [type locality: St. Croix, Virgin Is.].—Abbott, 1962:100, figs. 8a,d,j, 9.—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—PALAWAN (Balabac I.). SULU: Sulu (Cagayan Sulu Is.).

****Acrochaetium nitidulum* Abbott**

Acrochaetium nitidulum Abbott, 1962:95, fig. 6 [type locality: Gnat Reef, Balabac I., Palawan Prov.].—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—As above.

****Acrochaetium papenfussii* Abbott**

Acrochaetium papenfussii Abbott, 1962:97, fig. 7 [type locality: Cagayan Sulu I., Palawan Prov.].—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—As above.

***Acrochaetium robustum* Børgesen**

Acrochaetium robustum Børgesen, 1915:40, figs. 38–40 [type locality: St. Thomas, Virgin Is.].—Cordero, 1977a:38, figs. 13, 14.—Liao and Sotto, 1980:98.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. CEBU (Mactan I.).

***Acrochaetium seriatum* Børgesen**

Acrochaetium seriatum Børgesen, 1915:32, figs. 25–28 [syntype localities: various, all in Virgin Is.].—Abbott, 1962:113, fig. 15.—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—PALAWAN (Balabac I.).

***Acrochaetium sinicola* (Dawson) Papenfuss**

Rhodochorton sinicola Dawson, 1944:256, pl. 41: figs. 1, 2 [type locality: Isla Turner, near Isla Tiburón, Sonora, Mexico].—Cornejo and Velasquez, 1972:177, pl. 2: fig. 15.—Velasquez, Trono, and Doty, 1975:161. *Acrochaetium sinicola* (Dawson) Papenfuss, 1945:317 ["*sinicolum*"].

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

***Acrochaetium trichogloae* Børgesen**

Acrochaetium trichogloae Børgesen, 1952:13, figs. 6, 7 [type locality: Barkly I., Mauritius].—Abbott, 1962:93, figs. 5b–i.—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Cagayan Sulu Is.).

***Acrochaetium tuticorinense* Børgesen**

Acrochaetium tuticorinense Børgesen, 1937:30, figs. 15, 16 [type locality: Tuticorin, India].—Abbott, 1962:114, fig. 16.—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—PALAWAN (Balabac I.).

Order PALMARIALES

Family PALMARIACEAE

***Palmaria* Stackhouse**

***Palmaria palmata* (Linnaeus) Kuntze**

Fucus palmatus Linnaeus, 1753:1162 [type locality: "in Oceano"]. *Palmaria palmata* (Linnaeus) Kuntze, 1891:909.—Cordero, 1977a:173; 1978a:43.

PHILIPPINE DISTRIBUTION.—BATANES.

Order NEMALIALES

Family NEMALIACEAE

***Trichogloea* Kützing**

***Trichogloea requienii* (Montagne) Kützing**

Batrachospermum requienii Montagne, 1843b:355 [type locality: Red Sea]. *Trichogloea requienii* (Montagne) Kützing, 1847a:54.—Cordero, 1977a: 48, fig. 26, pl. I:c; 1984a:87.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Quezon.

Family DERMONEMATACEAE

Dermonema Harvey ex Heydrich

Dermonema frappieri (Montagne and Millardet)

Børgesen

Cladosiphon frappieri Montagne and Millardet, 1862:20, pl. XXVI: fig. 1 [type locality: Réunion].

Dermonema frappieri (Montagne and Millardet) Børgesen, 1942:42.—Cordero, 1977a:40.

PHILIPPINE DISTRIBUTION.—BATANES.

Liagoropsis Yamada

Liagoropsis schrammii (Børgesen) Doty and Abbott

Nemalion schrammii Børgesen, 1909:4, fig. 3, pl. I ["schrammii"] [type locality: St. Croix, Virgin Is.] [*Helminthocladia schrammii* Crouan frères in Mazé and Schramm, 1878:177, nomen subnudum].

Liagoropsis schrammii (Børgesen) Doty and Abbott, 1964:443 [including Philippine record, pages 445-448].—Trono, 1973a:129, fig. 14.—Velasquez, Trono, and Doty, 1975:152.

PHILIPPINE DISTRIBUTION.—LUZON: Albay, Sorsogon.

Yamadaella Abbott

**Yamadaella caenomyce* (Decaisne) Abbott

Liagora caenomyce Decaisne, 1842:119 [type locality: Manila, Luzon].—Montagne, 1844a:659.—Martens, 1868:88-89.—J. Agardh, 1876:518.—Villones and Magdamo, 1968:29, fig. 32.—Cornejo and Velasquez, 1972:178.—Reyes, 1972:151.—Velasquez et al., 1973:25, pl. 9: fig. 44.—Velasquez, Trono, and Doty, 1975:151.—Reyes, 1980:128, pl. 5: fig. 1.—Marcos-Agngaraygay, 1984b:125.

Yamadaella caenomyce (Decaisne) Abbott, 1970:117 ["*cenomyce*"] [including Philippine records].—Cordero, 1977a:48, fig. 16; 1979b:287; 1980b:43, fig. 7.—Meñez and Calumpong, 1981:380.—Hurtado-Ponce, 1983:127.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Batangas, Quezon, Albay. CATANDUANES. MINDORO: Oriental Mindoro (Lubang Is.), Samar: Eastern Samar. PANAY: Aklan. NEGROS: Negros Oriental. SIKUIJOR. MINDANAO (Agonoy I.).

Family HELMINTHOCADIACEAE

Helminthocladia J. Agardh

Helminthocladia australis Harvey

Helminthocladia australis Harvey, 1863: pl. CCLXXII [type locality: Fremantle, Western Australia, Australia].—Cordero, 1977a:40, fig. 15.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan.

Liagora Lamouroux

Liagora boergesenii Yamada

Liagora boergesenii Yamada, 1938a:11, figs. 5, 6, pl. 2 [syntype localities: Yonakuni-jima, Ryukyu-retto, Japan; Kasho-to, Taiwan].—Reyes, 1972:151.—Velasquez, Trono, and Doty, 1975:151.—Cordero, 1977a:43, pl. II:A; 1980b:41.—Reyes, 1980:128, pl. 5: fig. 4.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Quezon. CATANDUANES. NEGROS: Negros Oriental. SIKUIJOR. PALAWAN. SULU.

Liagora canariensis Børgesen

Liagora canariensis Børgesen, 1927:48, figs. 25-29 [syntype localities: Orotava and Santa Cruz, Isla Tenerife, Islas Canarias].—Cordero, 1977a:43, fig. 18, pl. II:B.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Liagora ceranoides Lamouroux

Liagora ceranoides Lamouroux, 1816:239 [type locality: St. Thomas, Virgin Is.].—Reyes, 1972:151.—Trono, 1973d:14, pl. 7: fig. 27.—Velasquez et al., 1973:25, pl. 9: fig. 46.—Velasquez, Trono, and Doty, 1975:151.—Cordero, 1976c:6; 1977a:44, figs. 17, 20, 21, pl. I:B; 1978a:13; 1979b:287.—Puig and Cordero, 1979:34 ["*charoides*"].—Cordero, 1980b:41, fig. 8.—Liao and Sotto, 1980:98.—Reyes, 1980:128, pl. 5: fig. 3.—Meñez and Calumpong, 1981:380.—Trono and De Lara, 1981: 11.—Saraya and Trono, 1982:28.—Hurtado-Ponce, 1983:127.—Cordero, 1984a:87.—Hurtado-Ponce, 1984:180.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Batangas, Quezon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SAMAR: Eastern Samar. PANAY: Aklan. LEYTE (Biliran I.). NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR.

Liagora ceranoides Lamouroux f. *leprosa* (J. Agardh) Yamada

Liagora leprosa J. Agardh, 1847:8 [type locality: Veracruz, Mexico].
Liagora ceranoides Lamouroux f. *leprosa* (J. Agardh) Yamada, 1938a:21.—Domantay, 1962:273.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Liagora divaricata Tseng

Liagora divaricata Tseng, 1941:268, figs. 2-4 [type locality: Tsinglan-Kang, Wenchang, Hainan, China].—Domantay, 1962:292.—Velasquez, Trono, and Doty, 1975:152.—Cordero, 1977a:45, fig. 19, pl. III:B; 1980b:42, fig. 9.—Saraya and Trono, 1982:29, pl. I: fig. 3.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas. MINDORO: Oriental Mindoro. SIKUIJOR.

Liagora farinosa Lamouroux

Liagora farinosa Lamouroux, 1816:240 [type locality: Suez, Egypt].—Reyes, 1972:151.—Cordero, 1973b:27.—Velasquez et al., 1973:25, pl.

9: fig. 45.—Westernhagen, 1973a:65.; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:152.—Cordero, 1976c:8; 1977a:45, figs. 23–25, pl. III:A; 1978a:14.—Trono and Tuason, 1978:13.—Cordero, 1979b:287; 1980b:43, fig. 10, pl. 27.—Reyes, 1980:128, pl. 5: fig. 2.—Trono and Fortes, 1980:69.—Ganzon-Fortes, 1981:22.—Trono and De Lara, 1981:11, pl. VII: fig. 4.—Trono and Fortes, 1982:149.—Saraya and Trono, 1982:27, pl. II: fig. 4.—Hurtado-Ponce, 1983:126.—Marcos-Angarayngay, 1984a:19, fig. 15; 1984b:125.

Ganonema farinosum (Lamoureux) Fan and Wang, 1974:492 ["farinosa"].—Meñez and Calumpung, 1981:380 ["farinosa"].

Liagora cheyneana Harvey, 1855:552 ["cheyniana"] [type locality: Cape Riche, Western Australia, Australia].—Seale, 1911:309.—Wester, 1916:159; 1921:224; 1924:21.—G. Blanco, 1938:513.—Quisumbing, 1951: 1011.—Montilla and Blanco, 1953:166.

Liagora farinosa Lamoureux var. *cheyneana* (Harvey) Zaneveld, 1956:45 [including Philippine records].—Zaneveld, 1959:105.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Pangasinan, La Union, Bataan, Batangas, Quezon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. LEYTE (incl. Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR. PALAWAN.

NOTE.—*Liagora farinosa* was placed in its own genus, *Ganonema*, by Fan and Wang (1974) on the basis of the carpogonial branch in that species, which was said to be borne on a special short filament rather than directly on an ordinary vegetative filament. Abbott (1984), pointing out the inconstancy of this character, returned the species to *Liagora*. *Liagora cheyneana* is included as a synonym on the authority of Howe (1920:554).

Liagora hawaiiiana Butters

Liagora hawaiiiana Butters, 1911:169, pl. XXIV: figs. 8, 9 [type locality: Laie Point, Koolauloa, Oahu, Hawaiian Is.].—Meñez, 1961:69, pl. 7: figs. 81, 82.—Velasquez, Trono, and Doty, 1975:152.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Liagora japonica Yamada

Liagora japonica Yamada, 1938a:16, figs. 9, 10, pl. 4: fig. 1 [syntype localities: various, all in Japan].—Domantay, 1962:292.—Velasquez, Trono, and Doty, 1975:152.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Liagora orientalis J. Agardh

Liagora orientalis J. Agardh, 1896:99 [type locality: Sri Lanka].—Cordero, 1977a:47.—Meñez and Calumpung, 1981:380.—Saraya and Trono, 1982:27.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CATANDUANES. CENTRAL VISAYAS.

Liagora robusta Yamada

Liagora robusta Yamada, 1938a:8, figs. 3, 4, pl. 12: fig. 1 [syntype localities: Chichi-jima and Haha-jima, Ogasawara-gunto (Bonin Is.), Japan].—Cordero, 1977a:47, fig. 20.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. LEYTE.

Liagora segawae Yamada

Liagora segawae Yamada, 1938a:18, figs. 11, 12, pl. 5, ["segawai"] [syntype localities: Chichi-jima, Ogasawara-gunto (Bonin Is.), and Okinawa-jima, Ryukyu-retto, Japan].—Cordero, 1973b:27.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. LEYTE (Biliran I.).

Liagora setchellii Yamada

Liagora setchellii Yamada, 1938a:13, figs. 7, 8, pl. 3: fig. 2 [syntype localities: Ogasawara-gunto (Bonin Is.) and Ryukyu-retto, Japan; Kashoto, Taiwan].—Saraya and Trono, 1982:28, pl. I: fig. 4.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Liagora tenuis J. Agardh

Liagora tenuis J. Agardh, 1896:101 [syntype localities: West Indies; Florida, USA].—Meñez and Calumpung, 1981:380.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

Liagora valida Harvey

Liagora valida Harvey, 1853:138, pl. XXXI:A [type locality: Sand Key, Florida, USA].—Velasquez et al., 1973:26, pl. 9: fig. 47.—Meñez and Calumpung, 1981:380.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. CENTRAL VISAYAS.

Order BONNEMAISONIALES

Family BONNEMAISONIACEAE

Asparagopsis Montagne

Asparagopsis taxiformis (Delile) Trevisan

Fucus taxiformis Delile, 1813:151, 295, pl. 57: fig. 2 [type locality: Alexandria, Egypt].

Asparagopsis taxiformis (Delile) Trevisan, 1845:45.—Velasquez, 1971:446, fig. 27.—Trono and Biña, 1973:2.—Cordero, 1976c:8; 1977a:69, pl. XI:B; 1978a:20; 1979b:276; 1980b:44.—Trono and Fortes, 1980:69.—Ganzon-Fortes, 1981:22.—Trono and De Lara, 1981:14, pl. IX: fig. 2.—Calumpung, 1982:145.—Saraya and Trono, 1982:32, pl. III: fig. 3.—Trono and Fortes, 1982:149.—Cordero, 1984a:92.

Dasya delilei Montagne, 1841 [1839–1842]:166, pl. 8: fig. 6.

Asparagopsis delilei (Montagne) Montagne, 1841 [1839–1842]:xiv.—Montagne, 1844a:662.—Kützinger, 1849:802.—J. Agardh, 1852 [1851–1863]:776.—Montagne, 1856:428.—Martens, 1868:98–99.—Dickie, 1874a:192.—Velasquez, Trono, and Doty, 1975:128.

Asparagopsis sanfordiana Harvey, 1855:544 [syntype localities: Garden I. and Rottneest I., Western Australia, Australia].—Quisumbing, 1951:1007.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasi-

nan, Quezon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. PANAY: Aklan, Antique. NEGROS: Negros Oriental (incl. Apo I.). CEBU (Sumilon I.). PALAWAN.

NOTE.—The conspecificity of *Asparagopsis sanfordiana* and *A. taxiformis* was proposed by J. Feldmann and G. Feldmann (1943:81). *Dasya delilei* Montagne is a superfluous and hence illegitimate substitute name for *Fucus taxiformis* Delile.

Family GALAXAURACEAE

An explanation of the replacement of Chaetangiaceae by Galaxauraceae is given in the appended Nomenclatural Notes.

Actinotrichia Decaisne

Actinotrichia fragilis (Forsskål) Børgesen

Fucus fragilis Forsskål, 1775:190 [type locality: Mokha, Yemen].

Actinotrichia fragilis (Forsskål) Børgesen, 1932:6.—Villones and Magdano, 1968:28, fig. 24.—Reyes, 1972:152.—Trono and Biña, 1973:2.—Cordero, 1973b:28.—Westernhagen, 1973a:64.—Ortega, Alcalá, and Reyes, 1974:186–188 (tables 2–4) [*"fragilissima"*].—Trono, 1974b:84.—Westernhagen, 1974:112 (table I).—Cordero, 1975:272, figs. 2, 3.—Velasquez, Trono, and Doty, 1975:126.—Cordero, 1977a:50, figs. 28, 202, pl. IV:A.—Trono and Young, 1977:59.—Trono, 1978:15.—Trono and Tuason, 1978:14.—Cordero, 1979b:287.—Puig and Cordero, 1979:35.—Liao and Sotto, 1980:98.—Fortes, 1981b:396.—Meñez and Calumpo, 1981:380.—Trono and De Lara, 1981:13.—Saraya and Trono, 1982:31, pl. III: fig. 2.—Hurtado-Ponce, 1983:127.—Cordero, 1984a:88; 1984b:63; 1984c:54.—Marcos-Angarayngay, 1984a:22, fig. 17.

Galaxaura rigida Lamouroux, 1816:265, pl. VIII: fig. 4 [type locality: "la mer des Indes"].

Actinotrichia rigida (Lamouroux) Decaisne, 1842:118.—Montagne, 1844a:659.—Dickie, 1874a:196.—Dickie, 1876a:244.—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte, Pangasinan, Bataan, Cavite (Corregidor I.), Batangas, Quezon, Manila Bay. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARIN DUQUE. MASBATE. SAMAR: Western Samar, Eastern Samar. LEYTE (incl. Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SIKUIJOR. MINDANAO: Zamboanga, Davao. PALAWAN. SULU: Sulu (Siasi I.).

NOTE.—The synonymy was proposed by Børgesen (1932:6).

Galaxaura Lamouroux

Kjellman (1900), using anatomy as a primary criterion, recognized 62 species of *Galaxaura*, 47 of which were new. Certain sections and subsections contained only tetrasporophytes or only sexual plants. Efforts to match tetrasporophytes with sexual plants and otherwise to reduce the number of recognized species have been made by subse-

quent workers, notably Howe, Børgesen, Chou, and Papenfuss. The greatest reduction of species is to be found in the monograph by Papenfuss, Mshigeni, and Chiang (1982). Many taxonomic decisions incorporated in that paper do not agree with those of previous workers. In none of these investigations has static comparative morphology been supported by culture studies. In a recent paper, Magruder (1984) determined by culture studies that *G. oblongata* had a life cycle involving a small filamentous tetrasporophyte. Magruder's discovery, while not affecting this catalog directly, emphasizes the need to broaden the scope of taxonomic study in *Galaxaura*. Meanwhile, the taxonomic scheme of Papenfuss, Mshigeni, and Chiang provides a useful framework.

Galaxaura apiculata Kjellman

Galaxaura apiculata Kjellman, 1900:74, pl. 12: figs. 13–26; pl. 20: fig. 36 [type locality: Ski, Japan].—Chou, 1945:51, pl. V: figs. 13–19; pl. IX: fig. 1.—Meñez, 1961:71, pl. 7: figs. 69–72.—Trono and Santiago, 1970:73, pl. III: figs. 3–7.—Cornejo and Velasquez, 1972:178.—Trono, 1974b:85.—Velasquez, Trono, and Doty, 1975:144.—Saraya and Trono, 1982:29, pl. II: fig. 2.

Galaxaura acuminata Kjellman ex Butters, 1911:180, pl. XXIV: figs. 17–19 [type locality: Waianae, Oahu, Hawaiian Is.].—Cordero, 1977a:52, fig. 31, pl. IX:A.—Puig and Cordero, 1979:36.—Cordero, 1984a:88.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Batangas. MINDORO: Oriental Mindoro. SAMAR: Eastern Samar. LEYTE (incl. Biliran I.). SULU: Sulu (Siasi I.).

NOTE.—The synonymy was proposed by Chou (1945:51).

Galaxaura arborea Kjellman

Galaxaura arborea Kjellman, 1900:72, pl. 11: figs. 1–11; pl. 20: fig. 39 [type locality: Australia].—Chou, 1945:50, pl. V: figs. 1–5; pl. X: figs. 1, 2.—Meñez, 1961:70, pl. 7: figs. 76, 78.—Velasquez, Trono, and Doty, 1975:144.—Cordero, 1976c:8; 1977a:54, fig. 29, pl. X:A; 1978a:15.—Meñez and Calumpo, 1981:380.—Hurtado-Ponce, 1983:128.—Cordero, 1984a:88.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Dalupiri I.), Ilocos Norte, Pangasinan, MINDORO: Occidental Mindoro. CENTRAL VISAYAS.

Galaxaura contigua Kjellman

Galaxaura contigua Kjellman, 1900:78, pl. 17: figs. 1–14; pl. 20: fig. 23 [type locality: Hawaiian Is.].—Cordero, 1977a:54, fig. 36, pl. VIII:C; 1984a:89.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. SAMAR: Eastern Samar.

Galaxaura falcata Kjellman

Galaxaura falcata Kjellman, 1900:73, pl. 11: figs. 12–21; pl. 12: figs. 1–4; pl. 20: fig. 33 [type locality: Enoshima, Kanagawa Prefecture,

Japan].—Westernhagen, 1973a:65; 1974:112 (table I).—Cordero, 1977a:57, fig. 32, pl. X:B.—Hurtado-Ponce, 1983:128.—Cordero, 1984a:89.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. MINDORO: Oriental Mindoro. CEBU (Mactan I.).

Galaxaura fasciculata Kjellman

Galaxaura fasciculata Kjellman, 1900:53, pl. 5: figs. 1–9, pl. 20: fig. 14 [type locality: Celebes, Indonesia].—Chou, 1945:44, pl. II: fig. 2; pl. VIII: fig. 1.—Trono and Santiago, 1970:73, pl. III: fig. 2; pl. IV: fig. 1.—Reyes, 1972:152.—Ortega, Alcalá, and Reyes, 1974:186, 188.—Velasquez, Trono, and Doty, 1975:144.—Cordero, 1976c:10; 1977a:57, fig. 33, pl. VI:B.—Cordero, 1978a:16.—Trono, 1978:15.—Trono and Tuason, 1978:14.—Cordero, 1979b:288.—Liao and Sotto, 1980:98.—Meñez and Calumpong, 1981:380.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Manila, Quezon. CATANDUANES. MINDORO: Oriental Mindoro. MARINDUQUE. LEYTE. PANAY: Aklan. NEGROS: Negros Oriental. CEBU (incl. Mactan I.). MINDANAO: Davao. PALAWAN (incl. Culion I.).

Galaxaura filamentosa Chou

Galaxaura filamentosa Chou in W.R. Taylor, 1945:139 [type locality: Isla Clarión, Islas Revillagigedo, Mexico].—Cordero, 1976c:10; 1977a:58, fig. 35, pl. IV:B; 1978a:17; 1984a:90.

Galaxaura rudis [misapplied name].—Meñez and Calumpong, 1981:380.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Quezon. SAMAR: Eastern Samar. CENTRAL VISAYAS. SIKUJOR.

NOTE.—Chou (1945:39) noted that certain records of *Galaxaura rudis* from China and Japan were representative of her new species, *G. filamentosa*. Cordero (1977a:58; 1978a:17), apparently misinterpreting Chou, listed *G. rudis* Kjellman (1900:43, pl. 2: figs. 1–9; pl. 20: fig. 11) as a taxonomic synonym of *G. filamentosa*. According to Papenfuss, Mshigeni, and Chiang (1982:407), *G. rudis* is a taxonomic synonym of *G. lapidescens* (Ellis and Solander) Lamouroux.

**Galaxaura kjellmanii* Weber-van Bosse

Galaxaura kjellmanii Weber-van Bosse, 1921:217, fig. 66 [type locality: North Ubian I., Sulu Archipelago].—Cordero, 1973b:29.—Velasquez, Trono, and Doty, 1975:145.—Cordero, 1977a:60, fig. 38, pl. IX:c.—Puig and Cordero, 1979:36.—Cordero, 1984a:90.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte. LEYTE (Biliran I.). SULU: Sulu (North Ubian I.).

NOTE.—According to Puig and Cordero (1979:36), part or all of the treatment of *Galaxaura elongata* by Cordero (1977a) applies to *G. kjellmanii*.

Galaxaura marginata (Ellis and Solander) Lamouroux

Corallina marginata Ellis and Solander, 1786:115, pl. 22: fig. 6 [type locality: Bahama Is.].

Galaxaura marginata (Ellis and Solander) Lamouroux, 1816:264.—Papenfuss,

Mshigeni, and Chiang, 1982:411, 415.

Galaxaura clavigera Kjellman, 1900:76, pl. 13: figs. 1–13; pl. 20: fig. 25 [type locality: Lasgori (Las Khorah), Somalia].—Cordero, 1976c:9; 1978a:15.

Galaxaura tenera Kjellman, 1900:77, pl. 14: figs. 10–19; pl. 20: fig. 32 [type locality: Mombasa, Kenya].—Cordero, 1977a:67, fig. 45, pl. IX:b; 1984a:91.

Galaxaura veprecula Kjellman, 1900:80, pl. 16: figs. 17–33; pl. 20: fig. 32 [type locality: Malagasy Republic].—Chou, 1947:16, pl. VI: figs. 1–8; pl. XII: fig. 1.—Velasquez, Trono, and Doty, 1975:145.—Cordero, 1976c:8, 9; 1978a:19.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Dalupiri I.). MINDORO: Oriental Mindoro. MINDANAO: Surigao.

NOTE.—This synonymy was proposed by Papenfuss, Mshigeni, and Chiang (1982:41).

Galaxaura oblongata (Ellis and Solander) Lamouroux

Corallina oblongata Ellis and Solander, 1786:114, pl. 22: fig. 1 [type locality: West Indies].

Galaxaura oblongata (Ellis and Solander) Lamouroux, 1816:262.—Chou, 1947:7, pls. II, III, IX.—Villones and Magdamo, 1968:28, fig. 26.—Trono and Santiago, 1970:76, pl. I: figs. 1–12; pl. IV: figs. 4–6.—Velasquez, 1971:446, fig. 26.—Reyes, 1972:152.—Velasquez et al., 1973:26, pl. 10: fig. 48.—Westernhagen, 1973a:65.—Ortega, Alcalá, and Reyes, 1974:187, 188.—Trono, 1974b:85.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:145.—Cordero, 1976c:9, 10; 1977a:60, fig. 34, pls. V:B, VII:B.—Trono and Young, 1977:59.—Trono, 1978:15.—Trono and Tuason, 1978:14.—Cordero, 1979b:276, 288.—Puig and Cordero, 1979:36.—Liao and Sotto, 1980:98.—Reyes, 1980:128, pl. 5: fig. 5.—Trono and Gonzon-Fortes, 1980:61, fig. [s.n.].—Meñez and Calumpong, 1981:380.—Trono and De Lara, 1981:12, pl. VIII: figs. 1, 3.—Montaño, Laserna, and Cajipe, 1982:39.—Papenfuss, Mshigeni, and Chiang, 1982:415, 418.—Saraya and Trono, 1982:29, pl. II: fig. 3.—Hurtado-Ponce, 1983:129.—Cordero, 1984a:90; 1984b:64.—Marcos-Agngarayngay, 1984a:24, fig. 18.

Corallina cylindrica Ellis and Solander, 1786:114, pl. 22: fig. 4 [type locality: West Indies].

Galaxaura cylindrica (Ellis and Solander) Lamouroux, 1821:22.—Chou, 1947:5, pl. I; pl. VIII: fig. 1.—Velasquez et al., 1973:26, pl. 10: fig. 50.—Velasquez, Trono, and Doty, 1975:144.—Cordero, 1979b:276.

**Galaxaura fastigiata* Decaisne, 1842:116 [lectotype locality: Manila, Luzon fide Svedelius, 1945:32].—Montagne, 1844a:659.—Martens, 1868:86–87.—Dickie, 1874a:195.—Grunow, 1874:37.—Kjellman, 1900:64, pl. 9: figs. 1–3.—De Toni, 1924:126.—Howe, 1932:169.—Domantay, 1962:289.—De Leon and Domantay, 1971:5, 8.—Velasquez et al., 1973:26, pl. 10: fig. 49.—Cordero, 1973b:28.—Velasquez, Trono, and Doty, 1975:145.—Cordero, 1976c:8; 1978a:16.—Reyes, 1980:129, pl. 5: fig. 6.—Cordero, 1984a:89.

Galaxaura constipata Kjellman, 1900:63, pl. 8: figs. 29–33; pl. 20: fig. 5 [type locality: Veracruz, Mexico].—Meñez, 1961:70.—Velasquez, Trono, and Doty, 1975:144.

Galaxaura dimorpha Kjellman, 1900:63, pl. 8: figs. 23–28; pl. 20: fig. 3 [type locality: Timor, Indonesia].—Meñez, 1961:70, pl. 7: figs. 65–68, 73–75.—Velasquez, Trono, and Doty, 1975:144.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Ilocos Sur, Pangasinan, Zambales, Bataan, Batangas, Quezon, Albay, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Ori-

ental Mindoro. MARINDUQUE. SAMAR: Northern Samar, Western Samar, Eastern Samar. LEYTE (incl. Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SQUIJOR. MINDANAO: Surigao, Misamis Oriental. PALAWAN. SULU: Sulu (Siasi I.).

NOTE.—The synonymy was proposed by Papenfuss, Mshigeni, and Chiang (1982:415). Svedelius (1945:32) selected Cuming 2241 as the lectotype collection of *Galaxaura fastigiata*. Kjellman (1900:65) stated that this specimen was from the Moluccas, an error that originated with Decaisne (1842:116), who wrote "Hab. in Moluccis (Manilla)".

Galaxaura obtusata (Ellis and Solander) Lamouroux

Corallina obtusata Ellis and Solander, 1786:113, pl. 22: fig. 2 [type locality: Bahama Is.].

Galaxaura obtusata (Ellis and Solander) Lamouroux, 1816:262.—Trono and Santiago, 1970:74, pl. II; pl. IV: fig. 2.—Cordero, 1977a:62, fig. 37, pl. VIII:A,B; 1978a:17.—Vannajan and Trono, 1978:15, fig. 15.—Cordero, 1984a:90.

Tubularia umbellata Esper, [1805–1812]: 125, pl. Tubularia XVII [type locality: probably West Indies; see Note].

Galaxaura umbellata (Esper) Lamouroux, 1816:262.—Chou, 1947:14, pl. V; pl. XI: fig. 1.—Trono and Santiago, 1970:75, pl. I: figs. 13–20.—Velasquez, Trono, and Doty, 1975:145.

Galaxaura robusta Kjellman, 1900:85, pl. 18: figs. 19–32; pl. 20: fig. 42 [type locality: Nosy-Bé, Malagasy Republic].—Cordero, 1978a:19.—Liao and Sotto, 1980:98.—Meñez and Calumpung, 1981:380.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Manila, Cavite, Batangas. MINDORO: Oriental Mindoro. CEBU (Mactan I.).

NOTE.—The synonymy was proposed by Papenfuss, Mshigeni, and Chiang (1982:418). For the provenance of *Tubularia umbellata*, Esper wrote: "gleichfalls in den ostindischen Gewässern." Because "gleichfalls" (i.e., "likewise") refers to *T. obtusata*, which is from the West Indies, it seems likely that "ostindischen" was an error for "westindischen."

Galaxaura rugosa (Ellis and Solander) Lamouroux

Corallina rugosa Ellis and Solander, 1786:115, pl. 22: fig. 3 [type locality: Jamaica].

Galaxaura rugosa (Ellis and Solander) Lamouroux, 1816:263.—Chou, 1947:13, pl. IV: figs. 12, 13; pl. X: fig. 2.—Cordero, 1977a:63, fig. 39, pl. VI:A.

Galaxaura elongata J. Agardh, 1876:529 [syntype localities: Tonga; north-eastern Australia].—Cordero, 1973b:28; 1976c:9, 10.; 1977a:54, figs. 30, 37, pl. V:A, pl. VI:C; 1978a:15.—Liao and Sotto, 1980:98.—Hurtado-Ponce, 1983:128.—Cordero, 1984a:89; 1984b:64.—Marcos-Agngarayngay, 1984a:24, fig. 19.

Galaxaura squalida Kjellman, 1900:55, pl. 6: figs. 1–12; pl. 20: fig. 9 [type locality: St. Croix, Virgin Is.].—Chou, 1947:9, pl. IV: figs. 1–11; pl. VIII: fig. 2.—Domantay, 1962:290.—Velasquez, Trono, and Doty, 1975:145.

Galaxaura glabriuscula Kjellman, 1900:56, pl. 7: figs. 1, 2; pl. 20: fig. 26 [type locality: Tahiti].—Puig and Cordero, 1979:36.

Galaxaura cuculligera Kjellman, 1900:58, pl. 6: figs. 22–30; pl. 20: fig. 30 [type locality: Goto, Japan].—Cordero, 1976c:9.

Galaxaura pacifica Tanaka, 1935:55, figs. 5, 6, pl. 17: fig. 2 [syntype localities: Haha-jima, Ogasawara-gunto [Bonin Is.], Japan; Garan-bi, Taiwan].—Cordero, 1976c:8, 9; 1977a:63; 1978a:18.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan. MINDORO: Occidental Mindoro. SAMAR: Eastern Samar. LEYTE (Biliran I.). CEBU (incl. Mactan I.). PALAWAN.

NOTE.—The synonymy was proposed by Papenfuss, Mshigeni, and Chiang (1982:421–422). According to Puig and Cordero (1979:36), part or all of the treatment of *Galaxaura elongata* by Cordero (1977a) applies to *G. kjellmanii*.

Galaxaura striata Kjellman

Galaxaura striata Kjellman, 1900:66, pl. 9: figs. 18–38; pl. 20: fig. 7 [type locality: Marquesas Is.].—Cordero, 1977a:64, figs. 40–42, pl. IV:C.

PHILIPPINE DISTRIBUTION.—BATANES.

Galaxaura subfruticulosa Chou

Galaxaura subfruticulosa Chou in W.R. Taylor, 1945:140 [type locality: Isla Clarión, Islas Revillagigedo, Mexico].—Domantay, 1962:290.—Cordero, 1973b:29; 1976c:9; 1977a:65, fig. 44, pl. V:C; 1978a:18; 1979b:289.—Puig and Cordero, 1979:36.—Meñez and Calumpung, 1981:380.—Saraya and Trono, 1982:30, pl. III: fig. 1.—Marcos-Agngarayngay, 1984a:25, fig. 20.

Galaxaura fruticulosa Kjellman, 1900:51, pl. 4: figs. 4–16; pl. 20: fig. 19 [type locality: Nomo-zaki, Nagasaki Prefecture, Japan] [intended nomenclatural synonym].—Velasquez, Trono, and Doty, 1975:145.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Quezon. SAMAR: Western Samar, Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan.

NOTE.—Chou intended to propose a new name for *Galaxaura fruticulosa* Kjellman, a later homonym of *G. fruticulosa* (Ellis and Solander) Lamouroux (1816:264), but designated a new type and thus effectively published a new species. Whether *G. fruticulosa* and *G. subfruticulosa* are conspecific remains to be determined.

Galaxaura subverticillata Kjellman

Galaxaura subverticillata Kjellman, 1900:48, pl. 3: figs. 12–14; pl. 20: fig. 17 [type locality: St. Croix, Virgin Is.].—Chou, 1945:45, pl. II: fig. 1; pl. VIII: fig. 2.—Trono and Santiago, 1970:74, pl. III: fig. 1; pl. IV: fig. 3.—Velasquez, Trono, and Doty, 1975:145.—Cordero, 1977a:65, fig. 47, pl. VII:A.—Puig and Cordero, 1979:37.—Trono and De Lara, 1981:13, pl. VIII: fig. 2.—Saraya and Trono, 1982:30, pl. II: fig. 1.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SAMAR: Eastern Samar. LEYTE (Biliran I.).

Scinaia Bivona-Bernardi***Scinaia hormoides* Setchell**

Scinaia hormoides Setchell, 1914:106, 125, pl. 12: figs. 33–35; pl. 13: figs. 36, 37 [including Philippine record] [type locality: Haleiwa, Oahu, Hawaiian Is.].—De Toni, 1924:101.—Velasquez, Trono, and Doty, 1975:163.—Trono and Fortes, 1980:69.—Saraya and Trono, 1982:31.

PHILIPPINE DISTRIBUTION.—LUZON: La Union, Pangasinan.

***Scinaia latifrons* Howe**

Scinaia latifrons Howe, 1911:500, fig. 1, pl. 28 [type locality: La Paz, Baja California Sur, Mexico].—Vannajan and Trono, 1978:16.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

***Scinaia moniliformis* J. Agardh**

Scinaia moniliformis J. Agardh, 1885:72 [type locality: Port Phillip, Victoria, Australia].—Cordero, 1977a:68, fig. 46, pl. XI:A; 1980b:44, pl. 28; 1982a:61, fig. 9; 1984a:91.—Marcos-Agngarayngay, 1984a:21, fig. 16.—Tungpalan, 1984:140.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Cagayan, Quezon.

Order GELIDIALES**Family GELIDIACEAE*****Beckerella* Kylin******Beckerella scalaramosa* Kraft**

Beckerella scalaramosa Kraft, 1976:85, figs. 1–15 [type locality: Bulusan, Sorsogon Prov., Luzon].

PHILIPPINE DISTRIBUTION.—As above.

NOTE.—The type collection of *Beckerella scalaramosa* had previously been recorded as *Beckerella* [*“Beckerella”*] sp. by Trono (1973a:130, figs. 18, 19).

Gelidiella* Feldmann and Hamel**Gelidiella acerosa* (Forsskål) Feldmann and Hamel**

Fucus acerosus Forsskål, 1775:190 [type locality: Mokha, Yemen].
Gelidiella acerosa (Forsskål) Feldmann and Hamel, 1934:533.—Domantay, 1962:290.—Galutira and Velasquez, 1964:502, pl. 3: figs. 9a,b; pl. 7: fig. 28.—Velasquez, 1971:446, fig. 28.—Cornejo and Velasquez, 1972:179.—Reyes, 1972:152.—Trono, 1972a:103.—Velasquez, 1972:63.—Cordero, 1973b:29.—Trono, 1973d:15, pl. 7: fig. 26.—Trono and Biña, 1973:3.—Velasquez et al., 1973:27.—Westernhagen, 1973a:65.—De Leon, 1974:31, 33, photo [s.n.], fig. [s.n.].—Ortega, Alcala, and Reyes, 1974:187, 188.—Westernhagen, 1974:112 (table 1).—Velasquez, Trono, and Doty, 1975:145.—Cordero, 1976c:9, 10;

1977a:70; 1978a:20.—Tahil, 1978:52.—Cordero, 1979b:276.—Garcia, 1979:45 (table 1).—Puig and Cordero, 1979:37.—Velasquez, 1979b:230.—Cordero, 1980b:45, pl. 29.—Fortes and Trono, 1980:59.—Liao and Sotto, 1980:98.—Reyes, 1980:129, pl. 6: fig. 1.—Trono and Fortes, 1980:70.—Trono and Ganzon-Fortes, 1980:63, fig. [s.n.].—Velasquez, 1980:127.—Chan, 1981:387.—Ganzon-Fortes, 1981:22.—Guzman, 1981:42, 45, 50.—Laserna et al., 1981:443.—Meñez and Calumpong, 1981:380.—Trono and De Lara, 1981:14, pl. IX: fig. 4.—Calumpong, 1982:145.—Cordero, 1982a:60, 61, fig. 12.—Saraya and Trono, 1982:32.—Trono and Fortes, 1982:150.—Hurtado-Ponce, 1983:129.—Cordero, 1984a:92; 1984c:54.—Hurtado-Ponce, 1984:180.—Marcos-Agngarayngay, 1984a:27, fig. 21 (captions for figs. 21 and 22 interchanged); 1984b:125.—Tungpalan, 1984:140.—Trono and Ganzon-Fortes, 1985:67.

Fucus rigidus Vahl, 1802:46 [type locality: St. Croix, Virgin Is.].

Sphaerococcus rigidus C. Agardh, 1822a:285.

Gelidium rigidum (C. Agardh) Greville, 1830:lvii.—Martens, 1868:92–93.—Dickie, 1876a:243, 244.—Howe, 1932:169.—Zaneveld, 1956:34.—Velasquez, Trono, and Doty, 1975:145.

Gelidiopsis rigida (C. Agardh) Weber-van Bosse, 1904a:104 [*“rigidum”*].—Zaneveld, 1959:116.—Cordero, 1976c:9, 10; 1977a:122; 1978a:22.

Fucus spiniformis Lamouroux, 1805:77, pl. XXXVI: figs. 3, 4 [*“spinaeformis”*] [syntype localities: Malagasy Republic; Mauritius].

Gelidium spiniforme (Lamouroux) Lamouroux, 1813:129.—Montagne, 1844a:662.—Velasquez, Trono, and Doty, 1975:145.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Bataan, Batangas, Quezon, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MASBATE. SAMAR: Western Samar, Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan, Capiz. GUIMARAS. NEGROS: Negros Occidental (incl. Ilacaon I., Suyac I.), Negros Oriental. CEBU (incl. Mactan I.). SIQUIJOR. MINDANAO: Surigao del Sur, Zamboanga. PALAWAN. SULU: Tawitawi.

NOTE.—*Fucus rigidus* Vahl, the intended basionym of *Gelidium rigidum* (and other combinations), is a later homonym of *F. rigidus* Turra (1780:68) and hence not priorable. *Sphaerococcus rigidus* C. Agardh is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN. *Fucus spiniformis* is included as a synonym on the authority of C. Agardh (1822a:285), *Sphaerococcus rigidus* on the authority of Børgesen (1932:5).

***Gelidiella adnata* Dawson**

Gelidiella adnata Dawson, 1954b:4 [type locality: Nha Trang, Vietnam].—Fortes and Trono, 1980:58.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

***Gelidiella taylorii* Joly**

Gelidiella taylorii Joly, 1957:102, fig. 1, pl. IX: figs. 5, 5a; pl. XII: fig. 3 [*“taylori”*] [type locality: São Vicente, São Paulo, Brazil].—Westernhagen, 1973a:65.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Gelidium Lamouroux***Gelidium amansii* (Lamouroux) Lamouroux**

Fucus amansii Lamouroux, 1805:48, pl. XXVI: figs. 2–5 [syntype localities: Malagasy Republic; Mauritius].

Gelidium amansii (Lamouroux) Lamouroux, 1813:129.—Martens, 1868:94–95.—Zaneveld, 1956:34; 1959:115.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Gelidium capense* (S.G. Gmelin) P.C. Silva,
new combination**

Fucus capensis S.G. Gmelin, 1768:157, pl. XVII: fig. 1 [type locality: Cape of Good Hope, South Africa].

Gelidium cartilagineum [misapplied name fide Dixon, 1967].—J. Agardh, 1852 [1851–1863]:473.—De Toni, 1897:152

PHILIPPINE DISTRIBUTION.—Locality not specified.

NOTE.—This species, which is common at wave-swept sites on cold-water shores of South Africa, probably does not occur in the Philippines. Dixon (1967) showed that *Fucus cartilagineus* Linnaeus (1753:1161), a name traditionally applied to this species, should be typified with a specimen referable to *Plocamium*. *Fucus capensis* and *F. versicolor* S.G. Gmelin (1768:158, pl. XVII: fig. 2) have long been considered conspecific with the alga traditionally called *Gelidium cartilagineum* (Linnaeus) Gaillon (see Turner, 1809:138 and J. Agardh 1852 [1851–1863]:473). With the removal of *Fucus cartilagineus* from consideration, Dixon (1967:58) adopted *Gelidium versicolor* (S.G. Gmelin) Lamouroux (1813:129) as the correct name for the South African alga. *Fucus versicolor*, however, is a superfluous name for *F. abrotanifolius* Linnaeus (1753:1161), which Gmelin cited as a synonym, and hence is illegitimate. (*Fucus abrotanifolius* is referable to *Cystoseira*.) The earliest available basionym for the South African alga thus appears to be *Fucus capensis* S.G. Gmelin.

***Gelidium coulteri* Harvey**

Gelidium coulteri Harvey, 1853:117 [type locality: Monterey Peninsula, California, USA].—Olea and De Leon, 1956:104.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Gelidium crinale* (Turner) Gaillon**

Fucus crinalis Turner, 1815 [1815–1819]:4, pl. 198: figs. a–c, e–g [syntype localities: England; Northern Ireland].

Gelidium crinale (Turner) Gaillon, 1828:362.—Trono and Fortes, 1980:70.—Fortes, 1981b:396.—Ganzon-Fortes, 1981:22.—Calumpung, 1982:145.—Trono and Fortes, 1982:150.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Occidental (Ilacon I.), Negros Oriental (incl. Apo I.). CEBU (incl. Pescador I.).

***Gelidium crinale* (Turner) Gaillon
var. *perpusillum* Piccone et Grunow**

Gelidium crinale (Turner) Gaillon var. *perpusillum* Piccone et Grunow in Piccone, 1884a:317 [*"perpusilla"*] [type locality: Massawa, Ethiopia].—Trono, 1973a:131.—Cordero, 1977a:72, fig. 49, pl. XXV:c.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. CENTRAL VISAYAS.

***Gelidium divaricatum* Martens**

Gelidium divaricatum Martens, 1868:30, pl. VIII: fig. 4 [type locality: Hong Kong].—Cordero, 1977a:73; 1978a:23.

PHILIPPINE DISTRIBUTION.—BATANES.

***Gelidium isabelae* W.R. Taylor**

Gelidium isabelae W.R. Taylor, 1945:154, pl. 5: figs. 8–12 [type locality: Isla Isabela, Galápagos].—Cordero, 1977a:73, fig. 50; 1978a:23.

PHILIPPINE DISTRIBUTION.—BATANES.

***Gelidium kintaroi* Yamada**

Gelidium clavatum Okamura, 1934:61, pl. 28; pl. 32: figs. 4–6 [syntype localities: Hoko-to (P'eng-hu), Taiwan; Amoy, China] [replaced name].—Cordero, 1977a:72, fig. 48.

Gelidium kintaroi Yamada, 1941a:201.

PHILIPPINE DISTRIBUTION.—CATANDUANES. MINDORO: Oriental Mindoro.

NOTE.—*Gelidium kintaroi* is a substitute name for *G. clavatum* Okamura, a later homonym of *G. clavatum* (Lamouroux) Lamouroux (1813:129).

***Gelidium pulchellum* (Turner) Kützing**

Fucus corneus Hudson var. *pulchellus* Turner, 1819 [1815–1819]:146, pl. 257: fig. p [syntype localities: Bantry Bay, Eire; Sidmouth and Isle of Portland, England].

Gelidium pulchellum (Turner) Kützing, 1868:18.—Domantay, 1962:290.—De Leon and Domantay, 1971:5, 10.—Velasquez, Trono, and Doty, 1975:145.—Trono and Fortes, 1980:70.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:150.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas.

***Gelidium pusillum* (Stackhouse) Le Jolis**

Fucus pusillus Stackhouse, 1795 [1795–1801]:16, pl. vi [type locality: Sidmouth, Devonshire, England].

Acrocarpus pusillus (Stackhouse) Kützing, 1849:762.—Martens, 1868:30, 92–93.—Velasquez, Trono, and Doty, 1975:126.

Gelidium pusillum (Stackhouse) Le Jolis, 1863:139.—Trono, 1973d:15.—Cordero, 1977a:74, fig. 51.—Vannajan and Trono, 1978:16.—Reyes, 1980:130, pl. 6: fig. 5.—Trono and Fortes, 1980:70.—Fortes,

1981b:396.—Ganzon-Fortes, 1981:22.—Meñez and Calumpong, 1981:381.—Calumpong, 1982:145.—Saraya and Trono, 1982:32.—Trono and Fortes, 1982:150.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite. MINDORO: Oriental Mindoro. NEGROS: Negros Occidental, Negros Oriental (incl. Apo I.). SIKUIJOR. MINDANAO: Zamboanga. PALAWAN.

***Gelidium pusillum* (Stackhouse) Le Jolis
var. *pacificum* W.R. Taylor**

Gelidium pusillum (Stackhouse) Le Jolis var. *pacificum* W.R. Taylor, 1945:153, pl. 5: fig. 7; pl. 33: fig. 1 [type locality: Isla Santa María, Galápagos].—Cordero, 1977a:74.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Gelidium rigens* (C. Agardh) Greville ex Kützinger**

Sphaerococcus rigens C. Agardh, 1822a:332 [type locality: Sea of Japan].
Gelidium rigens (C. Agardh) Greville ex Kützinger, 1849:767.—Martens, 1868:94–95.—Velasquez, Trono, and Doty, 1975:145.—Trono and Fortes, 1980:70.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:150.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

***Pterocladia* J. Agardh**

***Pterocladia caloglossoides* (Howe) Dawson**

Gelidium caloglossoides Howe, 1914:96, pl. 34: fig. 7; pl. 35 [type locality: Isla San Lorenzo, Peru].

Pterocladia caloglossoides (Howe) Dawson, 1953:76, pl. 6: fig. 1.

Pterocladia parva Dawson, 1953:77, pl. 6: fig. 2 [type locality: San Felipe, Baja California Norte, Mexico].—Meñez and Calumpong, 1981:381.—Calumpong, 1982:147.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental (incl. Apo I.). CEBU (Sumilon I.).

NOTE.—The conspecificity of *Pterocladia parva* and *P. caloglossoides* was proposed by Stewart and Norris (1981:281). The generic position of *P. caloglossoides*, however, is uncertain. Cystocarpic plants have not been reported from the type locality (Peru). On the basis of cystocarpic material from Mexico, Dawson transferred the species to *Pterocladia*, but abandoned this stance when treating the seaweeds of Peru (Dawson, Acleto, and Foldvik, 1964:37).

***Pterocladia capillacea* (S.G. Gmelin) Bornet**

Fucus capillaceus S.G. Gmelin, 1768:146, pl. XV: fig. 1 [type locality: Mediterranean Sea].

Pterocladia capillacea (S.G. Gmelin) Bornet in Bornet and Thuret, 1876:57, pl. XX: figs. 1–7.—Cordero, 1977a:75.—Hurtado-Ponce, 1983:130.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Pterocladia densa* Okamura**

Pterocladia densa Okamura, 1934:63, pl. 30: figs. 1, 2; pl. 33: figs. 4–8 [syntype localities: various, all in Japan].—Hurtado-Ponce, 1983:130.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Pterocladia nana* Okamura**

Pterocladia nana Okamura, 1931 [1929–1932]:53, pl. CCLXXVIII: figs. 1–14 [syntype localities: various, all in Japan].—Cordero, 1977a:75, fig. 52.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan.

Order CRYPTONEMIALES

Family ENDOCLADIACEAE

***Gloiopeltis* J. Agardh**

***Gloiopeltis complanata* (Harvey) Yamada**

Endocladia complanata Harvey, 1860a:333 [type locality: Shimoda, Shizuoka Prefecture, Japan].

Gloiopeltis complanata (Harvey) Yamada, 1932a:117.—Cordero, 1977a:114.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Gloiopeltis tenax* (Turner) Decaisne**

Fucus tenax Turner, 1806:376, pl. 13 [type locality: China Sea].

Gloiopeltis tenax (Turner) Decaisne, 1842:360.—De Leon, 1974:31, 32, photo [s.n.].—Cordero, 1977a:114, fig. 90.

PHILIPPINE DISTRIBUTION.—PALAWAN:

NOTE.—This species is traditionally accredited to (Turner) J. Agardh, the combination supposedly having been made at the time the generic name was proposed (J. Agardh, 1842:68, footnote). Agardh, however, merely referred to “Typo *Fuco tenaci* Turn. tab. 125,” and the combination was not made until a few months later, by Decaisne.

Family PEYSSONNELIACEAE

***Peyssonnelia* Decaisne**

***Peyssonnelia calcea* Heydrich**

Peyssonnelia calcea Heydrich, 1897a:10 [type locality: Tami I., Papua New Guinea].—Domantay, 1962:293.—Velasquez, Trono, and Doty, 1975:159.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Peyssonnelia conchicola* Piccone and Grunow**

Peyssonnelia conchicola Piccone and Grunow in Piccone, 1884a:317, pl. VII: figs. 5–8 [type locality: Massawa, Ethiopia].—Weber-van Bosse, 1921:272.—Velasquez, Trono, and Doty, 1975:159.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

***Peyssonnelia distenta* (Harvey) Yamada**

Galaxaura distenta Harvey, 1860a:331 [type locality: Oshima, Amami-gunto, Japan].

Peyssonnelia distenta (Harvey) Yamada, 1930b:30, pl. VI: fig. 7.—Cordero, 1976c:9; 1977a:78, figs. 57, 58, pl. XIII:A; 1978a:24; 1984a:93.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte.

****Peyssonnelia evae* Weber-van Bosse**

Peyssonnelia evae Weber-van Bosse, 1921:279, fig. 95 [type locality: Pearl Bank, Tawitawi Prov., Sulu Archipelago].—De Toni, 1924:593.—Velasquez, Trono, and Doty, 1975:159.

PHILIPPINE DISTRIBUTION.—As above.

****Peyssonnelia foveolata* (Weber-van Bosse) Denizot**

Cruoriella foveolata Weber-van Bosse, 1921:294, figs. 105, 106 [syntype localities: Muaras Reef, East Kalimantan, Indonesia; North Ubian I. and Pearl Bank, Sulu Archipelago].—De Toni, 1924:588.—Velasquez, Trono, and Doty, 1975:138.

Peyssonnelia foveolata (Weber-van Bosse) Denizot, 1968:113, 310.

PHILIPPINE DISTRIBUTION.—As above.

****Peyssonnelia indica* (Weber-van Bosse) Denizot**

Cruoriella indica Weber-van Bosse, 1921:283, figs. 97 [syntype localities: various in Indonesia; Tongquil I. and Capual I., Sulu Prov., Sulu Archipelago].—Velasquez, Trono, and Doty, 1975:138.

Peyssonnelia indica (Weber-van Bosse) Denizot, 1968:123, 310.

PHILIPPINE DISTRIBUTION.—As above.

****Peyssonnelia luzonensis* Cordero**

Peyssonnelia luzonensis Cordero, 1977a:80, fig. 61, pl. XII:B [type locality: Quezon I., Hundred Is., Pangasinan Prov., Luzon].

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan.

****Peyssonnelia mariti* (Weber-van Bosse) Denizot**

Cruoriella mariti Weber-van Bosse, 1921:288, fig. 101 [syntype localities: Sebangkaitan I., Little Paternoster Is. and Flores, Indonesia; Tongquil I., Sulu Prov., Sulu Archipelago].—De Toni, 1924:587.—Velasquez, Trono, and Doty, 1975:138.

Peyssonnelia mariti (Weber-van Bosse) Denizot, 1968:122, 310.

PHILIPPINE DISTRIBUTION.—As above.

****Peyssonnelia obscura* Weber-van Bosse**

Peyssonnelia obscura Weber-van Bosse, 1921:274, fig. 92 [syntype localities: various in Indonesia; Capual I. and North Ubian I., Sulu Prov., Sulu

Archipelago].—De Toni, 1924:592.—Velasquez, Trono, and Doty, 1975:159.

PHILIPPINE DISTRIBUTION.—As above.

***Peyssonnelia rubra* (Greville) J. Agardh**

Zonaria rubra Greville, 1827:340, pl. 3: fig. 3 [type locality: Ionian Islands, Greece].

Peyssonnelia rubra (Greville) J. Agardh, 1851 [1851–1863]:502.—Dickie, 1876a:245.—Velasquez, Trono, and Doty, 1975:159.—Liao and Sotto, 1980:98.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.). MINDANAO: Zamboanga.

****Peyssonnelia rubra* (Greville) J. Agardh
f. *orientalis* Weber-van Bosse**

Peyssonnelia rubra (Greville) J. Agardh f. *orientalis* Weber-van Bosse, 1921:270, 272, fig. 89 [syntype localities: various in Indonesia; North Ubian I., Sulu Prov., Sulu Archipelago].—Cordero, 1976c:10 [var. *orientalis*]; 1977a:78, fig. 56, pl. XIII:C [var. *orientalis*].—Saraya and Trono, 1982:34, pl. IV: fig. 2 [var. *orientalis*].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PALAWAN: Sulu (North Ubian I.).

***Peyssonnelia squamaria* (S.G. Gmelin) Decaisne**

Fucus squamarius S.G. Gmelin, 1768:171, pl. XX: fig. 1 [type locality: Mediterranean Sea].

Peyssonnelia squamaria (S.G. Gmelin) Decaisne, 1842:360.—Cordero, 1977a:80; 1978a:25.—Marcos-Agngarayngay, 1984a:30, fig. 24.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte.

Polystrata Heydrich

***Polystrata dura* Heydrich**

Polystrata dura Heydrich, 1905:35, pl. I [type locality: Tami I., Papua New Guinea].

Cruoriella dura (Heydrich) Weber-van Bosse, 1921:293, pl. VIII: fig. 3 [including Philippine record].—De Toni, 1924:585.—Velasquez, Trono, and Doty, 1975:138.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Tongquil I.).

Family CRYPTONEMIACEAE

***Carpopeltis* Schmitz**

***Carpopeltis affinis* (Harvey) Okamura**

Gigartina affinis Harvey, 1860a:332 [type locality: Hakodate, Hokkaido, Japan].

Carpopeltis affinis (Harvey) Okamura, 1934 [1933–1942]:30, pl. 316: figs. 4–11.—Cordero, 1976c:8; 1977a:100, fig. 79; 1978a:31.—Hurtado-Ponce, 1983:135; 1984:180.—Marcos-Agngarayngay, 1984a:37, fig. 30.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. SQUIJOR. PALAWAN.

***Carpopeltis angusta* (Harvey) Okamura**

Gymnogongrus ligulatus Harvey ex Kützing var. *angustus* Harvey, 1860a:332 [type locality: Shimoda, Shizuoka Prefecture, Japan].

Carpopeltis angusta (Harvey) Okamura, 1909 [1909–1912]:66, pl. LXVII.—Cordero, 1976c:8, 10; 1977a:100, fig. 78, pl. XVI:A; 1978a:32.—Hurtado-Ponce, 1983:135.—Marcos-Agngarayngay, 1984a:39, fig. 31.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte.

***Carpopeltis articulata* (Okamura) Okamura**

Prionitis articulata Okamura, 1899a:5, pl. I: figs. 3, 4 [syntype localities: various, all in Japan].

Carpopeltis articulata (Okamura) Okamura, 1909 [1909–1912]:70, pl. LXVIII.—Cordero, 1977a:101, pl. XV:B.—Hurtado-Ponce, 1983:135.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte. MINDORO: Oriental Mindoro. PALAWAN.

***Carpopeltis capitellata* (Sonder) Schmitz**

Cryptonemia capitellata Sonder, 1871:62 [type locality: Cape York, Queensland, Australia].

Carpopeltis capitellata (Sonder) Schmitz in Schmitz and Hauptfleisch, 1897 [1896–1897]:514.—Weber-van Bosse, 1921:246.—Velasquez, Trono, and Doty, 1975:130.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

***Carpopeltis crispata* Okamura**

Carpopeltis crispata Okamura, 1934 [1933–1942]:32, pl. 317: figs. 6–11 [syntype localities: various, all in Japan].—Cordero, 1976c:8, 10; 1977a:101; 1978a:32 [*C. crispata* prox.]; 1984b:65.—Tungpalan, 1984:140.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. PALAWAN.

***Carpopeltis divaricata* Okamura**

Carpopeltis divaricata Okamura, 1934 [1933–1942]:31, pl. 317: figs. 1–5 [syntype localities: various, all in Japan].—Cordero, 1977a:103, fig. 77, pl. XV:C; 1978a:32.—Hurtado-Ponce, 1983:137.—Cordero, 1984a:96.—Tungpalan, 1984:140.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. MINDORO: Oriental Mindoro. SAMAR: Eastern Samar.

***Carpopeltis formosana* Okamura**

Carpopeltis formosana Okamura, 1931:110, pl. 12 [type locality: Kotosho (Hung-t'ou), Taiwan].—Cordero, 1976c:6, 8, 9, 10; 1977a:104, fig. 80, pl. XV:A; 1978a:33.

PHILIPPINE DISTRIBUTION.—BATANES.

***Carpopeltis maillardii* (Montagne and Millardet) Chiang**

Phyllophora maillardii Montagne and Millardet, 1862:8, pl. XXIV [type locality: Réunion].

Carpopeltis maillardii (Montagne and Millardet) Chiang, 1970: 68, pl. 5c.—Reyes, 1980:132, pl. 8: fig. 2.

Cryptonemia rigida Harvey ex J. Agardh, 1876:163 [type locality: Sri Lanka].

Carpopeltis rigida (Harvey ex J. Agardh) Schmitz, 1895:168.—Cordero, 1976c:9; 1978a:33.—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—BATANES. SQUIJOR.

NOTE.—The conspecificity of *Phyllophora maillardii* and *Cryptonemia rigida* was proposed by Schmitz (1895:167), who, however, incorrectly adopted the later of the two names.

***Carpopeltis prolifera* (Hariot) Kawaguchi and Masuda**

Gigartina prolifera Hariot, 1891:220 [type locality: Yokosuka, Kanagawa Prefecture, Japan].

Carpopeltis prolifera (Hariot) Kawaguchi and Masuda, 1984:232.

Grateloupia flabellata Holmes, 1896:254, pl. 9: figs. 3a–c [type locality: Enoshima, Kanagawa Prefecture, Japan].

Carpopeltis flabellata (Holmes) Okamura, 1934 [1933–1942]:39, pl. 321: figs. 1–6.—Cordero, 1976c:10, 1977a:103, pl. XVI:B; 1978a:33.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—The conspecificity of *Gigartina prolifera* and *Grateloupia flabellata* was proposed by Kawaguchi and Masuda (1984.)

***Cryptonemia* J. Agardh**

***Cryptonemia crenulata* (J. Agardh) J. Agardh**

Phyllophora crenulata J. Agardh, 1841:18 [type locality: Bahia, Brazil].

Cryptonemia crenulata (J. Agardh) J. Agardh, 1851 [1851–1863]:225.—Cordero, 1977a:104, fig. 81, pl. XVI:C.—Meñez and Calumpong, 1981:381.—Hurtado-Ponce, 1983:136.—Cordero, 1984a:97.—Tungpalan, 1984:140.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Batangas. CENTRAL VISAYAS.

***Cryptonemia luxurians* (C. Agardh) J. Agardh**

Sphaerococcus lactuca C. Agardh var. *luxurians* C. Agardh, 1822a:232 [type locality: Brazil].

Cryptonemia luxurians (C. Agardh) J. Agardh, 1851 [1851–1863]:228.—Cordero, 1976c:8, 9, 10; 1977a:105; 1978a:34.

PHILIPPINE DISTRIBUTION.—BATANES.

***Cryptonemia schmitziana* (Okamura) Okamura**

Prionitis schmitziana Okamura, 1899a:6 [syntype localities: various, all in Japan].

Cryptonemia schmitziana (Okamura) Okamura, 1910 [1909–1912]:77.—Cordero, 1978a:34.

PHILIPPINE DISTRIBUTION.—BATANES.

Grateloupia* C. Agardh**Grateloupia conferta* (Kützing) Kützing**

Grateloupia filicina (Lamouroux) C. Agardh var. *conferta* Kützing, 1849:730 [type locality: Java, Indonesia].—Martens, 1868:30, 90–91.
Grateloupia conferta (Kützing) Kützing, 1867:7, pl. 23: figs. a, b.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

***Grateloupia dichotoma* J. Agardh**

Grateloupia dichotoma J. Agardh, 1842:103 [syntype localities: various, all in Mediterranean France].—Velasquez et al., 1973:29.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

***Grateloupia divaricata* Okamura**

Grateloupia divaricata Okamura, 1895:482, pl. IX: figs. 1, 2 [syntype localities: various, all in Japan].—Cordero, 1977a:106; 1982a:61.—Hurtado-Ponce, 1983:137; 1984:180.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte.

***Grateloupia doryphora* (Montagne) Howe**

Halymenia (?) *doryphora* Montagne, 1839:21 [type locality: Callao, Peru].
Grateloupia doryphora (Montagne) Howe, 1914:169 ["*doryphora*"].
Grateloupia californica Kylin, 1941:9, fig. 2B, pl. 1: figs. 1, 2 [type locality: La Jolla, California, USA].—Cordero, 1977a:106, pl. XVII:A; 1980b:46.—Hurtado-Ponce, 1983:136; 1984:180.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

NOTE.—The synonymy was proposed by Hollenberg and Abbott (1966:67).

***Grateloupia filicina* (Lamouroux) C. Agardh**

Fucus filicinus Wulfen in Jacquin, 1789:157, pl. 15: fig. 2 [type locality: Trieste, Italy].
Delesseria filicina Lamouroux, 1813:125.
Grateloupia filicina (Lamouroux) C. Agardh, 1822a:223.—Martens, 1868:30, 46, 88–89.—Zaneveld, 1956:40; 1959:120.—Reyes, 1972:154.—Trono, 1973a:131, figs. 10–12.—Velasquez, Trono, and Doty, 1975:147.—Cordero, 1977a:107.—Vannajan and Trono, 1978:17, fig. 23.—Cordero, 1980b:47, pl. [47].—Trono and Fortes, 1980:75.—Ganzon-Fortes, 1981:23.—Cordero, 1982a:61.—Trono and Fortes, 1982:154.—Hurtado-Ponce, 1983:137; 1984:180.—Marcos-Angarayngay, 1984b:125.—Tungpalan, 1984:140.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Rizal, Sorsogon. NEGROS: Negros Oriental. MINDANAO: Zamboanga.

NOTE.—*Fucus filicinus* Wulfen, the intended basionym of *Grateloupia filicina*, is a later homonym of *F. filicinus* Hudson (1762:473) and hence not priorable. *Delesseria filicina* Lamouroux is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Grateloupia ramosissima* Okamura**

Grateloupia ramosissima Okamura, 1913 [1913–1915]:60, pl. CXVII: figs. 1–11 [syntype localities: various, all in Japan].—Cordero, 1977a:107; 1980b:47; 1982a:61.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan. SQUIJOR.

Halymenia* C. Agardh**Halymenia acuminata* (Holmes) Okamura**

Grateloupia acuminata Holmes, 1896:254, pl. 10: figs. 2a–c [type locality: Enoshima, Kanagawa Prefecture, Japan].
Halymenia acuminata (Holmes) Okamura, 1908 [1907–1909]:174, pl. XXXV: figs. 6–12.—Cordero, 1977a:108, fig. 83.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PANAY: Iloilo. PALAWAN.

***Halymenia dilatata* Zanardini**

Halymenia dilatata Zanardini, 1851:35 [type locality: Red Sea].—Domanay, 1962:291.—Velasquez, Trono, and Doty, 1975:149.—Cordero, 1977a:109, figs. 84, 85, pl. XVIII:B.—Vannajan and Trono, 1978:18.—Puig and Cordero, 1979:39.—Meñez and Calumpung, 1981:381.—Calumpung, 1982:145.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Bataan, Cavite, Batangas. MINDORO: Oriental Mindoro. LEYTE (Biliran I.). PANAY: Capiz. NEGROS: Negros Oriental (Apo I.). CEBU (Sumilon I.).

***Halymenia durvillaei* Bory de Saint-Vincent**

Halymenia durvillaei Bory de Saint-Vincent, 1828 [1827–1829]:180, pl. 15 [type locality: New Ireland, Papua New Guinea].—Martens, 1868:29, 88–89.—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Galutira and Velasquez, 1964:504, pl. 3: fig. 10; pl. 8: fig. 29.—Domantay, 1968:26.—De Leon and Domantay, 1971:5, 10.—Velasquez, 1971:448, fig. 30.—Reyes, 1972:154.—Velasquez, 1972:63.—Velasquez et al., 1973:28, pl. 12: fig. 56.—Ortega, Alcalá, and Reyes, 1974:188.—Velasquez, Trono, and Doty, 1975:149.—Cordero, 1977a:111, fig. 86, pl. XVII:B.—Trono and Young, 1977:59.—Cordero, 1979b:276, 290, fig. 1.—Velasquez, 1979b:231.—Cordero, 1980b:48, fig. 11A, pl. 30.—Guzman, 1981:43, 51.—Liao and Sotto, 1980:99.—Reyes, 1980:133, pl. 8: fig. 5.—Trono and Fortes, 1980:75.—Ganzon-Fortes, 1981:23.—Meñez and Calumpung, 1981:381.—Calumpung, 1982:145.—Cordero, 1982a:60, fig. 13.—Trono and Fortes, 1982:154.—Hurtado-Ponce, 1983:137.—Cordero, 1984a:96; 1984b:65.—Hurtado-Ponce, 1984:180.—Marcos-Angarayngay, 1984a:36, fig. 29; 1984b:126.—Tungpalan, 1984:141.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Bataan, Cavite (Corregidor I.), Batangas, Quezon, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. SAMAR: Western Samar, Eastern Samar. PANAY: Aklan. GUIMARAS. NEGROS: Negros Occidental, Negros Oriental. CEBU (incl. Mactan I.). SQUIJOR. MINDANAO: Zamboanga. PALAWAN. SULU.

***Halymenia floresia* (Clemente y Rubio) C. Agardh**

Fucus floresius Clemente y Rubio, 1807:312 [type locality: Sanlúcar de Barrameda, Spain].

Halymenia floresia (Clemente y Rubio) C. Agardh, 1817:xix.—Tungpalan, 1984:141.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Halymenia formosa* Harvey ex Kützinger**

Halymenia formosa Harvey ex Kützinger, 1866:33, pl. 91: figs. *g, h* [syntype localities: Tonga; Australia].—Seale, 1911:309.—Wester, 1916:159; 1921:224; 1924:21.—G. Blanco, 1938:513.—Quisumbing, 1951:1010 ["*formosana*"].—Montilla and Blanco, 1953:fig. 5: 2.—Domantay, 1962:291.—Velasquez, Trono, and Doty, 1975:149.—Cordero, 1982a:60.

Halymenia durvillaei Bory de Saint-Vincent var. *formosa* (Harvey ex Kützinger) Weber-van Bosse, 1921:235.—Zaneveld, 1956:41; 1959:120.—Cordero, 1976c:8; 1978a:31.—Cordero, 1984a:96 ["var. *formosana* Yamada"].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, La Union, Pangasinan, Manila Bay.

***Halymenia harveyana* J. Agardh**

Halymenia harveyana J. Agardh, 1892:55 [type locality: Port Phillip Heads, Victoria, Australia].—Meñez, 1961:72.—Velasquez, Trono, and Doty, 1975:149.—Cordero, 1977a:112, pl. XVIII:c.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan.

Halymenia japonica

Halymenia japonica.—Domantay, 1968:26.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—Domantay did not give an author for this name and we have been unable to find its place of publication.

***Halymenia maculata* J. Agardh**

Halymenia maculata J. Agardh, 1885:12 [type locality: Mauritius].—Domantay, 1962:291.—Velasquez, Trono, and Doty, 1975:149.—Trono and Ang, 1982:16.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PALAWAN (Bugsuk I.).

****Halymenia microcarpa* (Montagne) P.C. Silva,
new combination**

Mesogloia microcarpa Montagne, 1844a:660 ["*Mesogloea*"] [type locality: "in insulis Philippinensibus"].—J. Agardh, 1848:59.—Kützinger, 1849:546.—Montagne, 1856:400.—Martens, 1868:68–69.—Velasquez, Trono, and Doty, 1975:153.

Halymenia ceylanica Harvey ex Kützinger, 1866:33, pl. 93: figs. *a, b* [type locality: Sri Lanka].—Grunow, 1874:32.

Halymenia durvillaei Bory de Saint-Vincent var. *ceylanica* (Harvey ex Kützinger) Weber-van Bosse, 1921:235.—Trono, 1973d:17.—Trono and Biña, 1973:6.—Trono, 1974b:87.—Vannajan and Trono, 1978:17, fig. 22.—Trono and Ganzon-Fortes, 1980:71, fig. [s.n.].—Trono and De Lara, 1981:17, pl. XI: fig. 2.—Saraya and Trono, 1982:36.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite, Batangas, Quezon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MINDANAO: Zamboanga. SULU: Sulu (Siasi I.).

NOTE.—The conspecificity of *Mesogloia microcarpa* and *Halymenia ceylanica* was proposed by Grunow (1874:32).

Prionitis* J. Agardh**Prionitis cornea* (Okamura) Dawson**

Grateloupia cornea Okamura, 1913 [1913–1915]:63, pl. CXVIII [syntype localities: various, all in Japan].

Carpopeltis cornea (Okamura) Okamura, 1942 [1933–1942]:100.—Cordero, 1977a:101.

Prionitis cornea (Okamura) Dawson, 1958:71.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Thamnoclonium* Kützinger***Thamnoclonium procumbens* Weber-van Bosse**

Thamnoclonium procumbens Weber-van Bosse, 1921:251, figs. 78, 79 [syntype localities: various in Indonesia; Capual I., Sulu Prov., Sulu Archipelago].—Velasquez, Trono, and Doty, 1975:165.

PHILIPPINE DISTRIBUTION.—As above:

****Thamnoclonium treubii* Weber-van Bosse**

Thamnoclonium treubii Weber-van Bosse, 1910:587, pl. XVI: fig. 1 [type locality: North Ubian I., Sulu Prov., Sulu Archipelago].—Weber-van Bosse, 1921:250.—Velasquez, Trono, and Doty, 1975:165.

PHILIPPINE DISTRIBUTION.—As above.

Family KALLYMENIACEAE***Callophyllis* Kützinger*****Callophyllis adhaerens* Yamada**

Callophyllis adhaerens Yamada, 1932b:273, pl. VI:a [syntype localities: various, all in Japan].—Velasquez et al., 1973:29, pl. 12: fig. 57.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

***Callophyllis adnata* Okamura**

Callophyllis adnata Okamura, 1932 [1929–1932]:79, pl. CCLXXXIX [type locality: Enoshima, Kanagawa Prefecture, Japan].—Velasquez et

al., 1973:29, pl. 12: fig. 58.—Cordero, 1980c:71, fig. 3.—Hurtado-Ponce, 1983:138; 1984:180.—Marcos-Agngarayngay, 1984b:126.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Bataan.

***Callophyllis okamurai* P.C. Silva, new name**

Pugetia japonica Kylin, 1941:16 [type locality: Chiba Prefecture, Japan].
Callophyllis chilensis [misapplied name fide Kylin, 1941:15–16].—Cordero, 1977a:115.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

NOTE.—Norris (1957:298) suggested that *Pugetia japonica* was referable to *Callophyllis*. Because of the existence of *C. japonica* Okamura (in De Toni and Okamura, 1895:77, pl. 16: figs. 13–17), a new epithet must be chosen. *Pugetia japonica* is validated by Kylin's reference to Howe (1914:117), who distinguished the Japanese plant from *Callophyllis chilensis* without giving it a name.

***Kallymenia* J. Agardh**

***Kallymenia callophylloides* Okamura and Segawa**

Kallymenia callophylloides Okamura and Segawa in Segawa, 1935:78, fig. 1, pl. 19: fig. 1 [type locality: Susaki, Shizuoka Prefecture, Japan].—Cordero, 1977a:116, fig. 94, pl. XXV:A.—Marcos-Agngarayngay, 1984a:39, fig. 33.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Kallymenia pacifica* Kylin**

Meredithia californica J. Agardh, 1899:49 [type locality: San Diego, California, USA].
Kallymenia pacifica Kylin, 1956:233 [*"Callymenia"*].—Cordero, 1981b:24, fig. 1.

PHILIPPINE DISTRIBUTION.—PANAY: Iloilo.

NOTE.—When transferring *Meredithia californica* to *Kallymenia*, Kylin was obliged to change the epithet by the prior existence of *K. californica* Farlow (1877:241).

***Kallymenia sessilis* Okamura**

Kallymenia sessilis Okamura, 1934 [1933–1942]:20, pl. 312 [type locality: Tateyama, Japan].—Velasquez et al., 1973:29, pl. 12: fig. 59.—Cordero, 1981b:26, fig. 2.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas, Bataan. PANAY: Iloilo.

Order CORALLINALES

Family CORALLINACEAE

***Amphiroa* Lamouroux**

***Amphiroa anastomosans* Weber-van Bosse**

Amphiroa anastomosans Weber-van Bosse, 1904b:91, pl. XVI: figs. 3, 4 [syntype localities: Borneo Bank and Flores, Indonesia].—Cordero, 1977a:82.—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Sorsogon. MINDORO: Oriental Mindoro. SAMAR: Western Samar. CENTRAL VISAYAS.

***Amphiroa anceps* (Lamarck) Decaisne**

Corallina anceps Lamarck, 1815:238 [type locality: "les mers Australes ou de la Nouv. Holl."].

Amphiroa anceps (Lamarck) Decaisne, 1842:125.—Cordero, 1977a:81, pl. XIV:A.—Hurtado-Ponce, 1983:131.—Cordero, 1984a:94.

Amphiroa dilatata Lamouroux, 1816:299 [type locality: "Australasie"].—Garcia, 1979:44 (table 1).—Cordero, 1984a:94.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. SQUIJOR. MINDANAO.

NOTE.—The synonymy was proposed by Weber-van Bosse (1904b:93).

***Amphiroa annulata* Lemoine**

Amphiroa annulata Lemoine, 1929:78, fig. 34, pl. IV: fig. 1 [type locality: James I. [Isla San Salvador or Santiago], Galápagos].—Domantay, 1962:288.—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Amphiroa beauvoisii* Lamouroux**

Amphiroa beauvoisii Lamouroux, 1816:299 [type locality: Portugal].—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

****Amphiroa cumingii* Montagne**

Amphiroa cumingii Montagne, 1844a:662 [type locality: "in insulis Philippinensibus"].—Kützing, 1849:702.—Areschoug, 1852:541.—Montagne, 1856:430.—Martens, 1868:86–87.—Dickie, 1876a:244.—Velasquez, Trono, and Doty, 1975:126.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

***Amphiroa ephedraea* (Lamarck) Decaisne**

Corallina ephedraea Lamarck, 1815:238 [type locality: "les mers Australes ou de la Nouv. Holl."].

Amphiroa ephedraea (Lamarck) Decaisne, 1842:124.—Cordero, 1973b:30

[*A. ephedraea* prox.]; 1976c:8; 1977a:82; 1978a:27.—Puig and Cordero, 1979:38.—Cordero, 1984c:54.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. MASBATE. LEYTE (Biliran I.). MINDORO: Oriental Mindoro. PALAWAN.

Amphiroa foliacea Lamouroux

Amphiroa foliacea Lamouroux in Quoy and Gaimard, 1824:628, pl. 93: figs. 2, 3 [type locality: Mariana Is.].—Cornejo and Velasquez, 1972:181.—Trono and Biña, 1973:4.—Velasquez et al., 1973:27, pl. 11: fig. 52.—Cordero, 1977a:84.—Trono and Young, 1977:59.—Puig and Cordero, 1979:38.—Liao and Sotto, 1980:98.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:381.—Trono and De Lara, 1981:15, pl. X: fig. 4.—Saraya and Trono, 1982:34a, pl. IV: fig. 1.—Hurtado-Ponce, 1983:131.—Cordero, 1984a:94; 1984b:64; 1984c:54.—Marcos-Angarayngay, 1984a:32, fig. 26.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Bataan, Batangas, Quezon, Albay. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MASBATE. SAMAR: Western Samar, Eastern Samar. LEYTE (incl. Biliran I.). CEBU (Mactan I.). PALAWAN.

**Amphiroa foliacea* Lamouroux f. *erecta* Weber-van Bosse

Amphiroa foliacea Lamouroux f. *erecta* Weber-van Bosse, 1904b:93, pl. XIV: figs. 2–8 [syntype localities: various in Indonesia; North Ubian I., Sulu Prov., and Sangasiapu I., Tawitawi Prov., Sulu Archipelago].—Velasquez, Trono, and Doty, 1975:127 [without designation of forma].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—As above.

Amphiroa fragilissima (Linnaeus) Lamouroux

Corallina fragilissima Linnaeus, 1758:806 [type locality: Jamaica].
Amphiroa fragilissima (Linnaeus) Lamouroux, 1816:298.—Dickie, 1876a:243.—Weber-van Bosse, 1904b:90 [f. *fragilissima*].—Howe, 1932:170.—Domantay, 1962:288.—Cornejo and Velasquez, 1972:182.—Reyes, 1972:153.—Trono, 1972a:103; 1973d:16.—Trono and Biña, 1973:4 [f. *fragilissima*].—Velasquez et al., 1973:28, pl. 11: fig. 53.—Ortega, Alcalá, and Reyes, 1974:185–188 (tables 1–4, 7).—Trono, 1974b:86 [f. *fragilissima*].—Velasquez, Trono, and Doty, 1975:127.—Cordero, 1976c:8; 1977a:85, figs. 62, 63; 1977a:85, pl. XIV:B [var. *fragilissima*]; 1978a:28.—Trono, 1978:16.—Vannajan and Trono, 1978:16, fig. 16.—Cordero, 1979b:289.—Puig and Cordero, 1979:38.—Liao and Sotto, 1980:98.—Reyes, 1980:130, pl. 6: fig. 6.—Trono and Ganzon-Fortes, 1980:67, fig. [s.n.].—Chan, 1981:387.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:381.—Trono and De Lara, 1981:16, pl. X: fig. 3.—Saraya and Trono, 1982:34a, pl. V: fig. 2.—Hurtado-Ponce, 1983:132.—Cordero, 1984a:95; 1984c:54.—Marcos-Angarayngay, 1984a:34, fig. 27.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Bataan, Cavite, Batangas, MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. MASBATE. LEYTE (Biliran I.). PANAY: Aklan. NE-

GROS: Negros Occidental, Negros Oriental. CEBU (Mactan I.). SIQUIJOR. PALAWAN. SULU: Sulu (Siasi I.), Tawitawi (incl. Sangasiapu I.).

Amphiroa fragilissima (Linnaeus) Lamouroux f. *cyathifera* (Lamouroux) Weber-van Bosse

Amphiroa cyathifera Lamouroux, 1824:627 [type locality: Moluccas, Indonesia].

Amphiroa fragilissima (Linnaeus) Lamouroux f. *cyathifera* (Lamouroux) Weber-van Bosse, 1904b:90 [including Philippine record].—Trono and Biña, 1973:4.—Trono, 1974b:86.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. SULU: Sulu (Siasi I.), Tawitawi (Sangasiapu I.).

Amphiroa hancockii W.R. Taylor

Amphiroa hancockii W.R. Taylor, 1942:95, pl. 13 [type locality: Caledonia, Atlantic Panama].—Velasquez et al., 1973:28, pl. 11: fig. 54.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan.

Amphiroa pacifica Kützing

Amphiroa pacifica Kützing, 1858:20, pl. 43: fig. 1 [type locality: Peru].—Martens, 1868:28, 84–85.—Velasquez, Trono, and Doty, 1975:127.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

Amphiroa rigida Lamouroux

Amphiroa rigida Lamouroux, 1816:297, pl. XI: fig. 1 [type locality: Mediterranean Sea].—Cordero, 1977a:86.—Meñez and Calumpung, 1981:381.—Meñez, Phillips, and Calumpung, 1983:23.—Meñez and Calumpung, 1984:105.

PHILIPPINE DISTRIBUTION.—SAMAR: Western Samar. CENTRAL VISAYAS. PALAWAN.

Amphiroa subcylindrica Dawson

Amphiroa subcylindrica Dawson, 1953:139, pl. 29: fig. 1 [type locality: Guaymas, Sonora, Mexico].—Domantay, 1962:288.—Velasquez, Trono, and Doty, 1975:127.—Saraya and Trono, 1982:34b, pl. V: fig. 1.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Amphiroa tribulus (Ellis and Solander) Lamouroux

Corallina tribulus Ellis and Solander, 1786:124, pl. 21: fig. e [type locality: West Indies].

Amphiroa tribulus (Ellis and Solander) Lamouroux, 1816:302.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Amphiroa valonioides* Yendo**

Amphiroa valonioides Yendo, 1902:5, pl. I: figs. 1–3; pl. IV: fig. 1 [syntype localities: various, all in Japan].—Cordero, 1977a:86, fig. 60, pl. XIII:B.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon. SAMAR: Eastern Samar. LEYTE.

***Amphiroa zonata* Yendo**

Amphiroa zonata Yendo, 1902:10, pl. I: figs. 11–14; pl. IV: fig. 9 [syntype localities: various, all in Japan].—Cordero, 1977a:86.—Hurtado-Ponce, 1983:132.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. MINDORO: Oriental Mindoro. SIKUIJOR.

Cheilosporum* (Decaisne) Zanardini**Cheilosporum cultratum* (Harvey) J.E. Areschoug**

Amphiroa cultrata Harvey, 1849 [1847–1849]:102, pl. XXXIX [in part] [lectotype locality: Port Natal (Durban), South Africa fide Johansen, 1977:175].

Cheilosporum cultratum (Harvey) J.E. Areschoug, 1852:545.—Domantay, 1962:288.—Meñez, 1961:71.—Trono, 1973a:133, fig. 9.—Velasquez, Trono, and Doty, 1975:134.—Cordero, 1977a:88, figs. 64, 65.—Saraya and Trono, 1982:36, pl. V: fig. 4.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Sorsogon. SAMAR: Western Samar, Eastern Samar.

***Cheilosporum jungermannioides* Ruprecht
ex J.E. Areschoug**

Cheilosporum jungermannioides Ruprecht ex J.E. Areschoug, 1852:546 [type locality: Tahiti]; 1976c:9; 1977a:88, figs. 66, 68; 1978a:28 [*C. jungermannioides* prox.].—Hurtado-Ponce, 1983:132.—Cordero, 1984a:95; 1984b:64.—Marcos-Agngarayngay, 1984a:34, fig. 28.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan. MINDORO: Oriental Mindoro. LEYTE. PALAWAN.

***Cheilosporum sagittatum* (Lamouroux) J.E. Areschoug**

Corallina sagittata Lamouroux in Quoy and Gaimard, 1824:625, pl. 95: figs. 11, 12 [type locality: Mauritius].
Cheilosporum sagittatum (Lamouroux) J.E. Areschoug, 1852:545.—Trono and De Lara, 1981:16, pl. X: fig. 2.

PHILIPPINE DISTRIBUTION.—MINDORO: Occidental Mindoro (Lubang Is.).

Corallina* Linnaeus**Corallina frondescens* Postels and Ruprecht**

Corallina frondescens Postels and Ruprecht, 1840:20, pl. XL: fig. 103 [type locality: Unalaska I., Aleutian Is.].

Corallina pinnatifolia (Manza) Dawson var. *digitata* Dawson, 1953:125, pl. 9: figs. 14–20; pl. 30: fig. 1 [type locality: Guaymas, Sonora, Mexico].—Cordero, 1976c:8, 9, 10; 1977a:90; 1978a:28.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—The synonymy was proposed by Johansen (1976:403).

Fosliella* Howe**Fosliella farinosa* (Lamouroux) Howe**

Melobesia farinosa Lamouroux, 1816:315, pl. XII: fig. 3 [type locality: not specified (Mediterranean Sea fide Chamberlain, 1983:343)].—Piccone, 1889:51, 59.—Foslie, 1904:55.—Domantay, 1962:293.—Velasquez, Trono, and Doty, 1975:153.

Fosliella farinosa (Lamouroux) Howe, 1920:587.—Cordero, 1977a:90.—Trono, 1978:17.—Reyes, 1980:132.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MARINDUQUE. SAMAR: Eastern Samar. SIKUIJOR. SULU: Sulu (North Ubian I.).

Haliptilon* (Decaisne) Lindley**Haliptilon cubense* (Montagne ex Kützing)
Garbary and Johansen**

Jania cubensis Montagne ex Kützing, 1849:709 [type locality: Cuba].

Corallina cubensis (Montagne ex Kützing) Kützing, 1858:37, pl. 77: fig. II.—Meñez and Calumpang, 1981:381.

Haliptilon cubense (Montagne ex Kützing) Garbary and Johansen, 1982:218.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

Hydrolithon* (Foslie) Foslie**Hydrolithon reinboldii* (Weber-van Bosse and Foslie)
Weber-van Bosse**

Lithophyllum reinboldii Weber-van Bosse and Foslie in Foslie, 1901c:5 [lectotype locality: Muaras Reef, East Kalimantan, Indonesia fide Adey and Lebednik, 1967:32].

Goniolithon reinboldii (Weber-van Bosse and Foslie) Weber-van Bosse and Foslie in Foslie, 1904:49 [including Philippine records].—Velasquez, Trono, and Doty, 1975:146.

Hydrolithon reinboldii (Weber-van Bosse and Foslie) Weber-van Bosse and Foslie in Foslie, 1909:55.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.), Tawitawi (Sangasiapu I.).

Jania* Lamouroux**Jania adhaerens* Lamouroux**

Jania adhaerens Lamouroux, 1816:270 [type locality: "Méditerranée?"].—Cordero, 1976c:9, 10; 1977a:91, fig. 73; 1978a:29.—Chan, 1981:387, 389.—Meñez and Calumpang, 1981:381.—Hurtado-Ponce, 1983:

133.—Meñez, Phillips, and Calumpong, 1983:23.—Meñez and Calumpong, 1984:105.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. SAMAR: Eastern Samar. NEGROS: Negros Oriental. SIKUIJOR. PALAWAN.

Jania capillacea Harvey

Jania capillacea Harvey, 1853:84 [type locality: Bahia Honda, Florida, USA].—Trono, 1972a:103; 1973d:16.—Trono and Biña, 1973:5.—Westernhagen, 1973a:65.—Trono, 1974b:85.—Westernhagen, 1974:112 (table I).—Cordero, 1976c:9; 1977a:91, figs. 67, 69; 1978a:29.—Trono, 1978:17.—Fortes and Trono, 1980:60, 66.—Liao and Sotto, 1980:99.—Trono and Ganzon-Fortes, 1980:69, fig. [s.n.].—Chan, 1981:387, 389.—Fortes, 1981b:396.—Trono and De Lara, 1981:16, pl. X: fig. 1.—Saraya and Trono, 1982:35.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Batangas. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. LEYTE. PANAY: Iloilo. NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SIKUIJOR. SULU: Sulu (Siasi I.), Tawitawi.

Jania decussato-dichotoma (Yendo) Yendo

Corallina decussato-dichotoma Yendo, 1902:25, pl. III: figs. 1–3: pl. VII: figs. 3, 4 [syntype localities: various, all in Japan].

Jania decussato-dichotoma (Yendo) Yendo, 1905b:37.—Cordero, 1973b:31 [*J. decussato-dichotoma* prox.]; 1976c:8; 1978a:29.—Fortes, 1981b:396.—Saraya and Trono, 1982:35.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. LEYTE (Biliran I.).

NOTE.—Cordero (1976c) recognized both *J. adhaerens* and *J. decussato-dichotoma* from the Batan Islands, but later (1977a) he merged the two species. While all Philippine reports under the two names may be referable to a single species, it seems likely that this species will prove to be distinct from *J. adhaerens*, in which case it would be called *J. decussato-dichotoma*.

Jania longiarthra Dawson

Jania longiarthra Dawson, 1953:119, pl. 9: fig. 4; pl. 27: fig. 4 [type locality: Isla Espiritu Santo, Baja California Sur, Mexico].—Trono, 1978:17.

PHILIPPINE DISTRIBUTION.—MARINDUQUE.

Jania micrarthrodia Lamouroux

Jania micrarthrodia Lamouroux, 1816:271, pl. 9: fig. 5 [type locality: "Australasie"].

Jania tenuissima Sonder, 1848 [1846–1848]:186 [type locality: Western Australia, Australia (mouth of Swan River fide Harvey, 1849 [1847–1849]:106)].—Piccone, 1886:67, 90.—Velasquez, Trono, and Doty, 1975:151.

PHILIPPINE DISTRIBUTION.—MASBATE (Ticao I.).

NOTE.—The synonymy was proposed by Areschoug (1852:555).

Jania pacifica J.E. Areschoug

Jania pacifica J.E. Areschoug, 1852:556 [type locality: Guatulco, Oaxaca, Mexico].

Jania mexicana W.R. Taylor, 1945:197, pl. 60 [type locality: Bahía Petatlán, Guerrero, Mexico].—Cordero, 1977a:92, fig. 74.—Chan, 1981:387.—Saraya and Trono, 1982:36, pl. V: fig. 3.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PALAWAN.

NOTE.—The conspecificity of *Jania mexicana* and *J. pacifica* became obvious to one of us (PCS) after collecting in Pacific tropical Mexico, the type locality for both species.

Jania pumila Lamouroux

Jania pumila Lamouroux, 1816:269, pl. IX: fig. 2 [syntype localities: Red Sea; "Indes Orientales"].—Velasquez et al., 1973:28, pl. 11: fig. 55.—Cordero, 1977a:92, figs. 70–72.—Chan, 1981:387, 389.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Bataan, Batangas.

Jania rubens (Linnaeus) Lamouroux

Corallina rubens Linnaeus, 1758:806 [type locality: Europe].

Jania rubens (Linnaeus) Lamouroux, 1816:272, pl. IX: fig. 6, 7.—Meñez, 1961:71, pl. 8: figs. 89, 90.—Reyes, 1972:153.—Velasquez, Trono, and Doty, 1975:150.—Reyes, 1980:131, pl. 7: figs. 4a,b.—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. NEGROS: Negros Oriental. SIKUIJOR.

Jania tenella (Kützinger) Grunow

Corallina tenella Kützinger, 1858:41, pl. 85: fig. II [syntype localities: Napoli, Italy; Mexico].

Jania tenella (Kützinger) Grunow, 1874:42.—Cornejo and Velasquez, 1972:183, pl. 3: fig. 27 [var. *tenella*].—Velasquez, Trono, and Doty, 1975:150.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

Jania tenella (Kützinger) Grunow var. *zacae* Dawson

Jania tenella (Kützinger) Grunow var. *zacae* Dawson, 1953:121, pl. 8: fig. 3; pl. 31: fig. 1 [type locality: Bahía Piedra Blanca, Pacific Costa Rica].—Domantay, 1962:292.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Jania unguolata (Yendo) Yendo

Corallina unguolata Yendo, 1902:26, pl. III: figs. 7, 8; pl. VII: fig. 8 [syntype localities: various, all in Japan].

Jania ungulata (Yendo) Yendo, 1905b:38.—Vannajan and Trono, 1978:17, fig. 17.—Chan, 1981:387, 389.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite.

***Jania ungulata* (Yendo) Yendo f. *brevior* (Yendo) Yendo**

Corallina ungulata Yendo f. *brevior* Yendo, 1902:27, pl. III: fig. 9; pl. VII: fig. 9 [type locality: Chiba Prefecture, Japan].

Jania ungulata (Yendo) Yendo f. *brevior* (Yendo) Yendo, 1905b:38.—Trono, 1973d:16 [var. *brevior*].—Cordero, 1977a:94, figs. 75, 76, pl. XIV:c [var. *brevior*]; 1978a:30 [var. *brevior*].—Liao and Sotto, 1980:99 [var. *brevior*].—Fortes, 1981b:396.—Meñez and Calumpo, 1981:381 [var. *brevior*].—Saraya and Trono, 1982:35 [var. *brevior*].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. SIKUJOR. CEBU (Mactan I.).

Lithophyllum Philippi

***Lithophyllum byssoides* (Lamarck) Foslíe**

Nullipora byssoides Lamarck, 1801:374 [type locality: Mediterranean Sea].

Lithothamnion byssoides (Lamarck) Philippi, 1837:388.—Dickie, 1877: 489.—Velasquez, Trono, and Doty, 1975:152.

Lithophyllum byssoides (Lamarck) Foslíe, 1900d:20.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

***Lithophyllum moluccense* (Foslíe) Foslíe**

Lithothamnion moluccense Foslíe, 1897:12 [type locality: Moluccas, Indonesia].

Lithophyllum moluccense (Foslíe) Foslíe, 1901a:12 [including Philippine record].—Foslíe, 1904:67, pl. XII: fig. 8 [f. *typica*].—Velasquez, Trono, and Doty, 1975:152.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

***Lithophyllum pallescens* (Foslíe) Foslíe**

Lithothamnion pallescens Foslíe, 1895:4, pl. 1: figs. 11–13 [type locality: Isla Espíritu Santo, Baja California Sur, Mexico].

Lithophyllum pallescens (Foslíe) Foslíe, 1900d:20.

Lithophyllum okamurae Foslíe, 1900c:4 ["*okamura*"] [type locality: Kanagawa Prefecture, Japan].—Foslíe, 1904:59, pl. XI: fig. 17.—Domantay, 1962:292.—Velasquez, Trono, and Doty, 1975:152 ["*okamura*" and "*okamura*"].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. SULU: Sulu (North Ubian I., Tongquil I.), Tawitawi (Sangasiapu I.).

NOTE.—The synonymy was proposed by Adey, Townsend, and Boykins (1982:40).

***Lithoporella* (Foslíe) Foslíe**

***Lithoporella indica* (Foslíe) Adey**

Litholepsis indica Foslíe, 1907:21 [type locality: Réunion].

Lithoporella indica (Foslíe) Adey, 1970:15.

PHILIPPINE DISTRIBUTION.—See "*Litholepsis indica* Foslíe f. *philippinensis* Foslíe."

TAXON OF UNCERTAIN VALUE

Philippine records for *Lithoporella indica* are under the following infraspecific taxon, which has not been formally transferred to it.

****Litholepsis indica* Foslíe f. *philippinensis* Foslíe**

Litholepsis indica Foslíe f. *philippinensis* Foslíe, 1908:9 [type locality: Adigñao, Camarines Sur Prov., Luzon].—De Toni, 1924:655.

PHILIPPINE DISTRIBUTION.—As above.

***Lithoporella melobesioides* (Foslíe) Foslíe**

Mastophora melobesioides Foslíe, 1903:24 [type locality: Maldives].—Foslíe, 1904:73.—Velasquez, Trono, and Doty, 1975:153.

Lithoporella melobesioides (Foslíe) Foslíe, 1909:59.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Capual I., Tongquil I.), Tawitawi (Sangasiapu I.).

Lithothamnion Heydrich

Woelkerling (1983b:193), after discovering that none of the five original species of *Lithothamnium* Philippi (1837:387) conforms to any modern concept of the genus, proposed the conservation of that generic name as treated by Heydrich (1897c:412), lectotypified by *L. muelleri* Lenormand ex Rosanoff. Heydrich spelled the name *Lithothamnion*, the spelling that has been proposed for conservation.

****Lithothamnion australe* Foslíe f. *brachiatum* Foslíe**

Lithothamnion australe Foslíe f. *brachiatum* Foslíe, 1904:24, pl. II: figs. 25–38 ["*brachiata*"] [syntype localities: Semau I. and Timor, Indonesia; North Ubian I. and Tongquil I., Sulu Prov., Sulu Archipelago].—Foslíe, 1929: pl. XVII: figs. 51–54.

PHILIPPINE DISTRIBUTION.—As above.

****Lithothamnion australe* Foslíe f. *minutulum* Foslíe**

Lithothamnion australe Foslíe f. *minutulum* Foslíe, 1904:24, pl. II: figs. 39–62 [*“minutula”*] [syntype localities: Tual, Kai Is., Moluccas, Indonesia; Tongquil I., Sulu Prov., Sulu Archipelago].—Foslíe, 1929: pl. XVII: figs. 59–70.

PHILIPPINE DISTRIBUTION.—As above.

****Lithothamnion australe* Foslíe f. *ubianum* Foslíe**

Lithothamnion australe Foslíe f. *ubianum* Foslíe, 1904:24, fig. 12, pl. II: figs. 18–24 [*“ubiana”*] [syntype localities: Celebes, Indonesia; Capual I., North Ubian I., and Tongquil I., Sulu Prov., Sulu Archipelago].—Foslíe, 1929: pl. XVII: figs. 40–44.

PHILIPPINE DISTRIBUTION.—As above.

NOTE.—The typification of *Lithothamnion australe* is discussed by Adey, Townsend, and Boykins (1982:57).

***Lithothamnion indicum* Foslíe f. *subtile* Foslíe**

Lithothamnion indicum Foslíe f. *subtile* Foslíe, 1907:7 [*“subtilis”*] [syntype localities: Indian and Pacific oceans].—Foslíe, 1929: pl. XIII: fig. 26.

Lithothamnion fruticulosum (Kützinger) Foslíe f. *clavulatum* [misapplied name fide Foslíe, 1907:7].—Foslíe, 1904:20, pl. II: figs. 6, 7, 9 [*“clavulata”*].—Velasquez, Trono, and Doty, 1975:152 [without designation of forma].

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Capual I., Tongquil I.), Tawitawi (Sangasapu I.).

***Mastophora* Decaisne**

***Mastophora rosea* (C. Agardh) Setchell**

Zonaria rosea C. Agardh, 1824:264 [type locality: Guam, Mariana Is.].

Mastophora rosea (C. Agardh) Setchell, 1943:129.—Domantay, 1962:292.—Velasquez, 1971:453, fig. 39.—Reyes, 1972:153.—Trono, 1972a:103.—Cordero, 1973b:31.—Trono, 1973d:16, pl. 9: fig. 2.—Trono and Biña, 1973:5.—Westernhagen, 1973a:65.—Ortega, Alcalá, and Reyes, 1974:187, 188.—Trono, 1974b:87.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:153.—Cordero, 1976c:8, 9, 10; 1977a:94, pl. XIV:D; 1978a:30.—Trono, 1978:18.—Cordero, 1979b:276, 289.—García, 1979:45 (table 1).—Puig and Cordero, 1979:38.—Liao and Sotto, 1980:99.—Reyes, 1980:131, pl. 7: fig. 5.—Meñez and Calumpung, 1981:381.—Trono and De Lara, 1981:15, pl. IX: fig. 1.—Saraya and Trono, 1982:34, pl. IV: fig. 4.—Hurtado-Ponce, 1983:133.—Cordero, 1984a:93; 1984b:65.—Marcos-Angarayngay, 1984a:32, fig. 25.

**Mastophora licheniformis* Decaisne, 1842:359, pl. 17: fig. 11 [type locality: Manila, Luzon].—Montagne, 1844a:662.—Velasquez, Trono, and Doty, 1975:153.

Mastophora decaisnei Kützinger, 1849:697.—Martens, 1868:84–85.—Velasquez, Trono, and Doty, 1975:152.

Melobesia foliacea Kützinger, 1843b:385 [type locality: Mariana Is.].—Dickie, 1876a:244 [with query].—Velasquez, Trono, and Doty, 1975:153.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan, Manila, Batangas, Quezon. CATANDUANES. MINDORO: Occidental Mindoro

(Lubang Is.), Oriental Mindoro. MARINDUQUE. SAMAR: Western Samar. LEYTE (Biliran I.). PANAY: Aklan, Capiz, Iloilo. GUIMARAS. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUJOR. MINDANAO: Zamboanga. PALAWAN. SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—The synonymy was proposed by Setchell (1943:129). *Mastophora decaisnei* Kützinger is a superfluous and hence illegitimate substitute name for *Mastophora licheniformis* Decaisne.

***Mesophyllum* Lemoine**

***Mesophyllum erubescens* (Foslíe) Lemoine**

Lithothamnion erubescens Foslíe, 1900a:9 [type locality: Ilha Fernando de Noronha, Brazil].—Foslíe, 1904:31.—Velasquez, 1971:448, fig. 29.—Velasquez et al., 1973:27.

Mesophyllum erubescens (Foslíe) Lemoine, 1928:252.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. MINDORO: Oriental Mindoro. MINDANAO: Davao. SULU: Tawitawi (Sangasapu I.).

***Mesophyllum imbricatum* (Dickie) Adey**

Lithothamnion imbricatum Dickie, 1877:486 [type locality: Tahiti].

Mesophyllum imbricatum (Dickie) Adey, 1970:24.

Lithothamnion dickiei Foslíe, 1900a:7 [including Philippine record].—Foslíe, 1904:30.

Lithothamnion polymorphum [misapplied name fide Foslíe, 1900a:7].—Dickie, 1876b:455.—Piccone, 1889:45, 53.—Velasquez, Trono, and Doty, 1975:152.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

NOTE.—*Lithothamnion dickiei* Foslíe is a superfluous and hence illegitimate substitute name for *L. imbricatum* Dickie.

***Mesophyllum pulchrum* (Weber-van Bosse and Foslíe) Lemoine**

Lithothamnion pulchrum Weber-van Bosse and Foslíe in Foslíe, 1901c:3 [type locality: Sailus Besar, Great Paternoster Is., Indonesia].—Foslíe, 1904:36, pl. IV: fig. 11.—Velasquez, Trono, and Doty, 1975:152.

Mesophyllum pulchrum (Weber-van Bosse and Foslíe) Lemoine, 1928:252.

PHILIPPINE DISTRIBUTION.—SULU.

***Mesophyllum siamense* (Foslíe) Adey**

Lithothamnion siamense Foslíe, 1901b:19 [type locality: various, all in Ko Chang Archipelago, Thailand].—Foslíe, 1904:10, pl. I: figs. 1, 2.—De Toni, 1924:611.—Velasquez, Trono, and Doty, 1975:152.

Mesophyllum siamense (Foslíe) Adey, 1970:26.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Tongquil I.).

NOTE.—Foslíe (1901b:19) originally described *Lithothamnion siamense* as comprising two formae, f. *minutum* and f. *simulans*. Upon elevating the latter to specific rank, Foslíe

(1904:16) lectotypified *L. siamense* with *f. minutum*, which he then called *f. typicum*. In the same work, Foslie (1904:10) described *L. siamense f. pseudoramosum*. Tongquil I. is in the list of localities for the species, but to which forma it pertains is not indicated.

Mesophyllum simulans (Foslie) Lemoine

Lithothamnion siamense Foslie *f. simulans* Foslie, 1901b:19 [type locality: Ko Sarlak, Ko Chang Archipelago, Thailand].
Lithothamnion simulans (Foslie) Foslie, 1904:16, pl. I: figs. 21–25 [including Philippine record].—Velasquez, Trono, and Doty, 1975:152.
Mesophyllum simulans (Foslie) Lemoine, 1928:252.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

Neogoniolithon setchell and mason

Neogoniolithon frutescens (Foslie) Setchell and Mason

Goniolithon frutescens Foslie, 1900b:9 [type locality: Funafuti, Ellice Is. (Tuvalu)].—Foslie, 1904:53.
Neogoniolithon frutescens (Foslie) Setchell and Mason, 1943:91.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

Neogoniolithon megalocystum (Foslie) Setchell and Mason

Goniolithon megalocystum Foslie, 1904:48, fig. 20, pl. IX: figs. 8, 9 [including Philippine record] [type locality: Karkaralong Is., Indonesia].—De Toni, 1924:663.
Neogoniolithon megalocystum (Foslie) Setchell and Mason, 1943:90.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

Phymatolithon Foslie

Phymatolithon has earlier taxonomic synonyms, but has been proposed for conservation by Woelkerling and Irvine (1986).

Phymatolithon calcareum (Pallas) Adey and McKibbin

Millepora calcarea Pallas, 1766:265 [syntype localities: North Atlantic Ocean and Mediterranean Sea].
Lithothamnion calcareum (Pallas) J.E. Areschoug, 1852:523.—Velasquez, 1953b:206.—Velasquez, Trono, and Doty, 1975:152.
Phymatolithon calcareum (Pallas) Adey and McKibbin, 1970:100.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Phymatolithon purpureum (P. Crouan and H. Crouan) Woelkerling and L. Irvine

Lithothamnion purpureum P. Crouan and H. Crouan, 1867:150, pl. 20: fig. 133 bis:1–5 [lectotype locality: Mingant, near Brest, Finistère, France fide Woelkerling and Irvine, 1986:69, 71].

Phymatolithon purpureum (P. Crouan and H. Crouan) Woelkerling and L. Irvine, 1986:71.

Lithothamnion polymorphum [misapplied name; see Note].—Piccone, 1889:51, 59.

PHILIPPINE DISTRIBUTION.—Locality not specified.

NOTE.—*Millepora polymorpha* Linnaeus (1767:1285) is a superfluous and hence illegitimate substitute name for *M. calcarea* Pallas (1766:265). Nonetheless, the two names have traditionally been applied to separate species. According to Woelkerling and Irvine (1986), the species traditionally but incorrectly known as *Lithothamnion polymorphum* (Linnaeus) J.E. Areschoug (1852:524) or *Phymatolithon polymorphum* (Linnaeus) Foslie (1898:4) is conspecific with *L. purpureum* P. Crouan and H. Crouan.

Porolithon (Foslie) Foslie

Porolithon onkodes (Heydrich) Foslie

Lithothamnion onkodes Heydrich, 1897a:6, pl. I: fig. 11 [type locality: Tami I., Papua New Guinea].
Lithophyllum onkodes (Heydrich) Heydrich, 1901:533.—Foslie, 1904:57.
Porolithon onkodes (Heydrich) Foslie, 1909:57 ["oncodes"].

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

Sporolithon Heydrich

Sporolithon erythraeum (Rothpletz) Kylin

Lithothamnion erythraeum Rothpletz, 1893:5 [type locality: Red Sea].
Sporolithon erythraeum (Rothpletz) Kylin, 1956:205.
Sporolithon ptychoides Heydrich *f. durum* Heydrich, 1897b:67, pl. III: figs. 20–23 ["dura"] [type locality: Tor, Sinai Peninsula, Egypt].
Archaeolithothamnion erythraeum (Rothpletz) Foslie *f. durum* (Heydrich) Foslie, 1900d:8 ["dura"].—Foslie, 1904:38, pl. V: figs. 8, 9.—Velasquez, Trono, and Doty, 1975:128 [without designation of forma].

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

TAXON OF UNCERTAIN VALUE

The following infraspecific taxon is related to *Sporolithon erythraeum* but has not been formally transferred to it.

Archaeolithothamnion erythraeum (Rothpletz) Foslie *f. molle* (Heydrich) Foslie

Sporolithon ptychoides Heydrich *f. molle* Heydrich, 1897b:67, pl. III: figs. 15–19 ["mollis"] [type locality: Tor, Sinai Peninsula, Egypt].
Archaeolithothamnion erythraeum (Rothpletz) Foslie *f. molle* (Heydrich) Foslie, 1900d:8 ["mollis"].—Foslie, 1904:38, pl. VI: figs. 2–4, 7, 9.—Velasquez, Trono, and Doty, 1975:128 [without designation of forma].

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I., Tongquil I.), Tawitawi (Pearl Bank, Sangasiapu I.).

NOTE.—When establishing *Sporolithon ptychoides*, Heydrich divided the species into two formae, *durum* and *molle*.

Later, Heydrich (1897c:415–416) elevated *f. molle* to specific rank and thus lectotypified *S. ptychoides* with *f. durum*. Foslíe (1900d:8) proposed the conspecificity of *Lithothamnion erythraeum* and both forms of *Sporolithon ptychoides*. We are not convinced of the usefulness of giving taxonomic recognition to forma *molle*.

***Sporolithon schmidtii* (Foslíe) Gordon, Masaki, and Akioka**

Archaeolithothamnion schmidtii Foslíe, 1901b:16 [type locality: Ko Kahdat, Ko Chang Archipelago, Thailand].—Foslíe, 1904:43, pl. VIII: fig. 16.—De Toni, 1924:603.—Foslíe, 1929:pl. XLIV: fig. 16.—Velasquez, Trono, and Doty, 1975:128.

Sporolithon schmidtii (Foslíe) Gordon, Masaki, and Akioka, 1976:250.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Pearl Bank).

****Sporolithon sibogae* (Weber-van Bosse and Foslíe) P.C. Silva, new combination**

Archaeolithothamnion sibogae Weber-van Bosse and Foslíe in Foslíe, 1901c:3 [type locality: Pearl Bank, Tawitawi Prov., Sulu Archipelago].—Foslíe, 1904:41, pl. VII.—De Toni, 1924:604.—Foslíe, 1929:pl. XLIII: figs. 5–15.—Velasquez, Trono, and Doty, 1975:128.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.), Tawitawi (Pearl Bank).

***Sporolithon timorensis* (Foslíe) P.C. Silva, new combination**

Archaeolithothamnion timorensis Foslíe, 1904:42, pl. VIII: figs. 1–14 [lectotype locality: Sailu Besar, Great Paternoster Is., Indonesia fide Adey and Lebednik, 1967:85] [including Philippine record].—Velasquez, Trono, and Doty, 1975:128.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

Order GIGARTINALES

Family RHIZOPHYLLIDACEAE

***Portieria* Zanardini**

The complicated nomenclature of this genus is discussed in the appended Nomenclatural Notes.

***Portieria hornemannii* (Lyngbye) P.C. Silva, new combination**

Desmia hornemannii Lyngbye, 1819:35, pl. 7:c ["*hornemannii*"] [type locality: probably Red Sea].—Reyes, 1972:154.—Trono, 1973d:15, pl. 10: fig. 6.—Trono and Biña, 1973:5.—Trono, 1974b:88.—Velasquez, Trono, and Doty, 1975:140.—Cordero, 1976c:8.—Trono and Tuason, 1978:15.—Cordero, 1979b:276.—Reyes, 1980:132, pl. 8: fig. 1.—Trono and Ganzon-Fortes, 1980:65, fig. [s.n.].—Trono and De Lara, 1981:15, pl. IX: fig. 3.—Saraya and Trono, 1982:33, pl. III: fig. 4.

Chondrococcus hornemannii (Lyngbye) Schmitz, 1895:170 ["*hornemannii*"].—Meñez, 1961:73.—Villones and Magdamo, 1968:28, fig. 25.—Cornejo and Velasquez, 1972:182.—Westernhagen, 1973a:64.—Ortega, Alcalá, and Reyes, 1974:188.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:135.—Cordero, 1976c:8, 10, 11; 1977a:96, fig. 53; 1978a:26; 1979b:289.—García, 1979:44 (table I).—Puig and Cordero, 1979:39.—Liao and Sotto, 1980:98.—Meñez and Calumpung, 1981:381.—Hurtado-Ponce, 1983:133.—Cordero, 1984a:92; 1984b:66.—Marcos-Agungarayngay, 1984a:28, fig. 22 [captions for figs. 21 and 22 interchanged].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Cavite, Batangas, Quezon. CANTANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan, Iloilo. NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SIKUIJOR. MINDANAO. PALAWAN. SULU: Sulu (Siasi I.).

***Portieria japonica* (Harvey) P.C. Silva, new combination**

Desmia japonica Harvey, 1860a:331 [type locality: Shimoda, Shizuoka Prefecture, Japan].

Chondrococcus japonicus (Harvey) De Toni, 1895a:39.—Cordero, 1977a:97; 1984a:93.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Bataan, Cavite, Quezon. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental.

Family POLYIDACEAE

***Rhodopeltis* Harvey**

***Rhodopeltis borealis* Yamada**

Rhodopeltis borealis Yamada, 1931a:75, pl. XIX: fig. 1 [syntype localities: Ryukyu-retto, Japan; Kotosho (Hung-t'ou), Taiwan].—Meñez, 1961:72.—Domantay, 1962:293.—Velasquez, Trono, and Doty, 1975:161.—Cordero, 1976c:8; 1977a:98, fig. 59, pl. XII:c; 1978a:25.—Saraya and Trono, 1982:33, pl. IV: fig. 3.—Hurtado-Ponce, 1983:134.—Marcos-Agungarayngay, 1984a:28, fig. 23.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan.

***Rhodopeltis gracilis* Yamada and Tanaka**

Rhodopeltis gracilis Yamada and Tanaka in Yamada, 1935:30, fig. I, pl. 15: fig. 2 [syntype localities: Chichi-jima, Ogasawara-gunto (Bonin Is.), Japan; Kotosho (Hung-t'ou), Taiwan].—Meñez, 1961:72, pl. 7: figs. 78–80.—Velasquez, Trono, and Doty, 1975:161.—Cordero, 1976c:9, 10; 1977a:98, figs. 54, 55; 1978a:26.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. LEYTE.

Family NEMASTOMATACEAE

Titanophora (J. Agardh) J. Feldmann*Titanophora incrustans* (J. Agardh) Børgesen

Halymenia incrustans J. Agardh, 1885:15 [type locality: Florida, USA].
Titanophora incrustans (J. Agardh) Børgesen, 1949:4.—Velasquez et al., 1973:30, pl. 13: fig. 60.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan, Batangas.

Titanophora weberae Børgesen

Titanophora weberae Børgesen, 1943:39, fig. 13 [type locality: Salee Strait, Irian Barat, Indonesia].—Domantay, 1962:293.—Velasquez, Trono, and Doty, 1975:165.—Cordero, 1977a:118, figs. 91–93, 95, pl. XIX:A.—Meñez and Calumpong, 1981:381.—Hurtado-Ponce, 1983:139.—Cordero, 1984b:65.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas, Quezon, MINDORO: Oriental Mindoro. SAMAR: Eastern Samar. CENTRAL VISAYAS. PALAWAN.

Family SEBDENIACEAE

Sebdenia (J. Agardh) Berthold*Sebdenia limensis* (Kützinger) Howe

Euhymenia limensis Kützinger, 1849:743 [type locality: Callao, Peru].—Martens, 1868:90–91 [with query].—Velasquez, Trono, and Doty, 1975:143.
Sebdenia limensis (Kützinger) Howe, 1914:160.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

Sebdenia yamadae Okamura and Segawa

Sebdenia yamadae Okamura and Segawa in Segawa, 1938:144, fig. 6, pl. 34: fig. 1 ["yamadae"] [syntype localities: various, all in Japan].—Cordero, 1977a:150, fig. 143, pl. XXI:c.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

Family GRACILARIACEAE

Ceratodictyon Zanardini*Ceratodictyon spongiosum* Zanardini

Ceratodictyon spongiosum Zanardini, 1878:37 [type locality: Aru Is., Indonesia].—Trono, 1972a:104; 1973d:19.—Trono and Biña, 1973:9.—Cordero, 1979b:291.—Puig and Cordero, 1979:41.—Liao and Sotto, 1980:99.—Trono and Ganzon-Fortes, 1980:85, fig. [s.n.].—Meñez and Calumpong, 1981:381.—Saraya and Trono, 1982:42.—Trono and Ang, 1982:20.—Cordero, 1984a:100.—Marcos-Agngarayngay, 1984a:51, fig. 42.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Batangas, Quezon. MINDORO: Oriental Mindoro.

PANAY: Aklan. LEYTE (Biliran I.). CEBU (Mactan I.). PALAWAN (Bugsuk I.). SULU: Tawitawi.

Gelidiopsis Schmitz*Gelidiopsis intricata* (C. Agardh) Vickers

Sphaerococcus intricatus C. Agardh, 1822a:333 [syntype localities: Mauritius; Hawaiian Is.; "Ravak" (Lawak), Waigeo I., Moluccas, Indonesia].
Gelidiopsis intricata (C. Agardh) Vickers, 1905:61.—Reyes, 1972:152.—Trono, 1972a:104; 1973d:19.—Trono and Biña, 1973:3.—Velasquez, Trono, and Doty, 1975:145.—Cordero, 1976c:10; 1977a:119, figs. 99, 100; 1978a:21.—Trono and Ganzon-Fortes, 1980:87, fig. [s.n.].—Meñez and Calumpong, 1981:381.—Trono and De Lara, 1981:18, pl. XI: fig. 1.—Calumpong, 1982:145.—Saraya and Trono, 1982:30.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Batangas, Quezon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. NEGROS: Negros Oriental. SIQUIJOR. SULU: Tawitawi.

Gelidiopsis repens (Kützinger) Weber-van Bosse

Gelidium repens Kützinger, 1868:21, pl. 60: figs. a, b [type locality: New Caledonia].
Gelidiopsis repens (Kützinger) Weber-van Bosse, 1928:425.—Cordero, 1976c:8, 9, 10; 1977a:121, figs. 98, 267; 1978a:22, 53; 1980b:54, fig. 19b, pl. 36; 1984c:55.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Zambales. MINDORO: Oriental Mindoro. MASBATE. SAMAR: Western Samar, Eastern Samar. PANAY: Aklan. NEGROS: Negros Oriental. SIQUIJOR. PALAWAN.

Gelidiopsis variabilis (J. Agardh) Schmitz

Gelidium variabile J. Agardh, 1851 [1851–1863]:468 [type locality: India].
Gelidiopsis variabilis (J. Agardh) Schmitz, 1895:148.—Cordero, 1977a:122 ["*Gelidiopsis repens*" in error].

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Gracilaria Greville*Gracilaria arcuata* Zanardini

Gracilaria arcuata Zanardini, 1858:265, pl. V: fig. 2 [type locality: Aqaba, Jordan].—Weber-van Bosse, 1928:429, fig. 173.—Velasquez, Trono, and Doty, 1975:146.—Cordero, 1977a:124, fig. 101, pl. XX:B; 1980b:55, fig. 18, pl. [49].—Trono and Fortes, 1980:73.—Trono and Ganzon-Fortes, 1980:95, fig. [s.n.].—Ganzon-Fortes, 1981:22.—Meñez and Calumpong, 1981:381.—Calumpong, 1982:145.—Trono and Fortes, 1982:152.—Hurtado-Ponce, 1983:140.—Cordero, 1984a:100; 1984c:55.—Hurtado-Ponce, 1984:180.—Marcos-Agngarayngay, 1984b:126.—Tungpalan, 1984:138.—Abbott, 1985:89, fig. 17.—Trono and Ganzon-Fortes, 1985:66.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte, Batangas. MINDORO: Oriental Mindoro. MASBATE.

NEGROS: Negros Occidental (incl. Ilacaon I., Suyac I.), Negros Oriental (incl. Apo I.). SIKUIJOR. MINDANAO: Davao. PALAWAN. SULU: Sulu (Tongquil I.).

***Gracilaria arcuata* Zanardini
var. *snackeyi* Weber-van Bosse**

Gracilaria arcuata Zanardini var. *snackeyi* Weber-van Bosse, 1928:430, fig. 173 [type locality: Macassar, Celebes, Indonesia].—Trono, Azanza-Corrales, and Manuel, 1983:32, fig. 7.—Abbott, 1985:89.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas.

***Gracilaria blodgettii* Harvey**

Gracilaria blodgettii Harvey, 1853:111 [type locality: Key West, Florida, USA].—Cordero, 1977a:124, figs. 102, 103, 105, 112, pl. XIX:B; 1979b:292; 1980b:56, fig. 19A.—Meñez and Calumpong, 1981:381.—Calumpong, 1982:145.—Meñez, Phillips, and Calumpong, 1983:18.—Cordero, 1984c:55.—Marcos-Anggarayngay, 1984a:46, fig. 38.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. MASBATE. SAMAR: Western Samar. PANAY: Aklan. NEGROS: Negros Oriental (Apo I.). CEBU. SIKUIJOR. PALAWAN.

***Gracilaria bursa-pastoris* (S.G. Gmelin) P.C. Silva**

Fucus bursa-pastoris S.G. Gmelin, 1768:121, pl. VIII: fig. 3 [type locality: Mediterranean Sea].

Gracilaria bursa-pastoris (S.G. Gmelin) P.C. Silva, 1952a:265.—Cordero, 1977a:125, fig. 106.

Sphaerococcus compressus C. Agardh, 1822a:308 [syntype localities: Cádiz, Spain; Oneglia, Liguria, Italy].

Gracilaria compressa (C. Agardh) Greville, 1830:liv.—Howe, 1932:169.—Meñez, 1961:74.—Velasquez, Trono, and Doty, 1975:146.—Trono and Fortes, 1980:73.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:152.—Abbott, 1985:89.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas, Quezon, Albay. MINDORO: Oriental Mindoro. SAMAR: Eastern Samar. PANAY. NEGROS: Negros Oriental. PALAWAN.

NOTE.—The synonymy was proposed by J. Agardh (1852 [1851–1863]:593).

***Gracilaria canaliculata* Sonder**

Sphaerococcus canaliculatus Kützinger, 1868:29, pl. 82: figs. d, e [type locality: Wagap, New Caledonia].

Gracilaria canaliculata Sonder, 1871:56.—Cantoria, Valenzuela, and Velasquez, 1951:187, fig. 2.—Cantoria, Velasquez, and Valenzuela, 1951:297, 298.—Velasquez, Trono, and Doty, 1975:146.—Abbott, 1985:89, fig. 43.

Corallopsis opuntia J. Agardh, 1872:40 [type locality: Sri Lanka].—Westernhagen, 1973a:65; 1974:112 (table I).

Gracilaria crassa Harvey ex J. Agardh, 1876:417 [type locality: Sri Lanka].—Seale, 1911:309.—Wester, 1916:159; 1921:224; 1924:21.—G. Blanco, 1938:513.—Quisumbing, 1951:1010.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:38; 1959:118.—Domanay, 1962:291.—Velasquez, Trono, and Doty, 1975:146.—Cordero, 1977a:127, figs. 108–110; 1978a:36.—Trono and Azanza-Corrales, 1979:26.—Cordero, 1980b:56, fig. 20, pl. [48].—Trono and

Fortes, 1980:73.—Ganzon-Fortes, 1981:22.—Meñez and Calumpong, 1981:381.—Calumpong, 1982:145.—Cordero, 1982a:60, 61.—Saraya and Trono, 1982:41.—Trono and Fortes, 1982:152.—Marcos-Anggarayngay, 1984b:127.—Abbott, 1985:89.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, La Union, Pangasinan, Manila Bay. MINDORO: Oriental Mindoro. SAMAR: Western Samar. NEGROS: Negros Oriental (incl. Apo I.). CEBU (Mactan I.). SIKUIJOR. MINDANAO: Davao.

NOTE.—The synonymy was proposed by Newton (1953:412). *Sphaerococcus canaliculatus* Kützinger, the intended basionym of *Gracilaria canaliculata*, is a later homonym of *S. canaliculatus* C. Agardh (1822a:260) and hence not priorable. *Gracilaria canaliculata* Sonder is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Gracilaria coronopifolia* J. Agardh**

Gracilaria coronopifolia J. Agardh, 1852 [1851–1863]:592 [type locality: Oahu, Hawaiian Is.].—Galutira and Velasquez, 1964:508, pl. 5: fig. 14; pl. 9: fig. 34.—Velasquez, 1972:63.—Cordero, 1977a:127, figs. 104, 104a, pl. XX:A; 1978a:35.—Trono and Azanza-Corrales, 1979:26.—Velasquez, 1979b:231.—Liao and Sotto, 1980:99.—Trono and Fortes, 1980:73.—Trono and Ganzon-Fortes, 1980:89, fig. [s.n.].—Ganzon-Fortes, 1981:22.—Guzman, 1981:42, 44 [*"coronipifolia"*].—Laserna et al., 1981:443.—Trono, 1981b:55 (table 1).—Trono and Azanza-Corrales, 1981:743.—Trono and De Lara, 1981:18.—Cordero, 1982a:60, 61.—Luistro, Cajipe, and Laserna, 1982:46.—Trono and Ang, 1982:19.—Trono and Fortes, 1982:152.—Hurtado-Ponce, 1983:140.—Trono, Azanza-Corrales, and Manuel, 1983:20, figs. 2, 9b.—Cordero, 1984a:101; 1984b:66; 1984c:55.—Hurtado-Ponce, 1984:180.—Marcos-Anggarayngay, 1984b:127.—Tungpalan, 1984:138.—Abbott, 1985:89, fig. 46.

Gracilaria lichenoides (Lamouroux) Greville f. *coronopifolia* (J. Agardh) May, 1948:37.—Zaneveld, 1956:39; 1959:119.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Ilocos Sur, Pangasinan, Cavite, Batangas, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. MASBATE. SAMAR: Eastern Samar. NEGROS: Negros Oriental. CEBU. SIKUIJOR. MINDANAO: Zamboanga. PALAWAN (incl. Bugsuk I.). SULU: Sulu (Lapac I., Siasi I.).

***Gracilaria cylindrica* Børgesen**

Gracilaria cylindrica Børgesen, 1920:375, figs. 364, 365 [type locality: St. Jan (St. John), Virgin Is.].—Westernhagen, 1973a:65; 1974:112 (table I).—Reyes, 1980:135, pl. 10, fig. 1.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.). SIKUIJOR.

***Gracilaria damaecornis* J. Agardh**

Gracilaria damaecornis J. Agardh, 1852 [1851–1863]:597 [type locality: Atlantic North America].—Westernhagen, 1973a:65; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Gracilaria disticha* (J. Agardh) J. Agardh**

Sphaerococcus distichus J. Agardh, 1837:172 [type locality: Ethiopia].

Gracilaria disticha (J. Agardh) J. Agardh, 1852 [1851–1863]:594.—Abbott, 1985:89, fig. 56.

PHILIPPINE DISTRIBUTION.—ROMBLON (Sibuyan I.).

***Gracilaria edulis* (S.G. Gmelin) P.C. Silva**

Fucus edulis S.G. Gmelin, 1768:113 [syntype localities: various, all in "India Orientalis" (Indonesia)].

Gracilaria edulis (S.G. Gmelin) P.C. Silva, 1952a:293.—Cordero, 1977a:128, fig. 111.—Hurtado-Ponce, 1983:140.—Cordero, 1984a:101.—Hurtado-Ponce, 1984:180.—Abbott, 1985:89, figs. 55, 58.

Fucus lichenoides Turner, 1809:124, pl. 118: figs. *a-c*, *e-i* [superfluous name].

Gigartina lichenoides Lamouroux, 1813:137.

Sphaerococcus lichenoides (Lamouroux) C. Agardh, 1817:XVII.—Martens, 1868:31, 94–95.—Velasquez, Trono, and Doty, 1975:163.

Gracilaria lichenoides (Lamouroux) Greville, 1830:liv.—Seale, 1911:309.—Wester, 1916:159; 1921:224; 1924:21.—Collado, 1926:129 [with query].—Howe, 1932:169.—G. Blanco, 1938:513.—Cantoria, Valenzuela, and Velasquez, 1951:187, fig. 3.—Cantoria, Velasquez, and Valenzuela, 1951:297, 298 [f. *lichenoides*].—Quisumbing, 1951:50.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:38; 1959:119.—Domantay, 1962:290.—De Leon and Domantay, 1971:5.—Velasquez, Trono, and Doty, 1975:146.—Trono and Fortes, 1980:73.—Ganzon-Fortes, 1981:22.—Cordero, 1982a:60, 61.—Trono and Fortes, 1982:153.—Abbott, 1985:89.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (incl. Babuyan Is.), Ilocos, La Union, Pangasinan, Manila Bay, Sorsogon. MINDORO: Oriental Mindoro. PANAY. MINDANAO: Zamboanga.

NOTE.—*Fucus lichenoides* Turner, the intended basionym of *Gracilaria lichenoides* (and other combinations), is a later homonym of *F. lichenoides* S.G. Gmelin (1768:120, pl. VIII: figs. 1, 2) and hence not priorable. *Gigartina lichenoides* Lamouroux is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN. *Fucus lichenoides* Turner is not only a later homonym, but also superfluous, since its protologue included the citation of *F. edulis* S.G. Gmelin.

***Gracilaria eucheumoides* Harvey**

Gracilaria eucheumoides Harvey, 1860a:331 ["*eucheumoides*"] [syntype localities: various, all in Ryukyu-retto, Japan].—Dickie, 1876a:243.—Seale, 1911:309.—Wester, 1916:159; 1921:224; 1924:21.—G. Blanco, 1938:513.—Quisumbing, 1951:1010.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:38; 1959:118.—Domantay, 1962:290.—De Leon and Domantay, 1971:5, 9.—Cornejo and Velasquez, 1972:182, 183.—Reyes, 1972:155.—Trono, 1972a:104.—Bersamin et al., 1973:187.—Trono, 1973d:18, pl. 9: fig. 1.—Trono and Biña, 1973:9.—Velasquez et al., 1973:31, pl. 13: fig. 63.—Westernhagen, 1973a:65.—Ortega, Alcala, and Reyes, 1974:186, 187, 188.—Trono, 1974b:90; 1974c:18.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:146.—Cordero, 1976c:10; 1977a:129, figs. 113, 113a, 114, pls. X, XX; 1978a:37; 1979b:292, fig. 4.—Puig and

Cordero, 1979:40.—Cordero, 1980b:57, fig. 21, pl. 37.—Liao and Sotto, 1980:99.—Reyes, 1980:135, pl. 9: fig. 5.—Trono and Fortes, 1980:73.—Trono and Ganzon-Fortes, 1980:91, fig. [s.n.].—Chan, 1981:387.—Ganzon-Fortes, 1981:22.—Guzman, 1981:43, 51.—Meñez and Calumpung, 1981:381.—Trono and De Lara, 1981:18.—Calumpung, 1982:145.—Cordero, 1982a:60, 61.—Saraya and Trono, 1982:40, pl. VI: fig. 4.—Trono and Ang, 1982:19.—Trono and Fortes, 1982:153.—Hurtado-Ponce, 1983:141.—Trono, Azanza-Corrales, and Manuel, 1983:27, fig. 5.—Cordero, 1984a:101.—Hurtado-Ponce, 1984:180.—Marcos-Anggarayngay, 1984a:48, fig. 39; 1984b:127.—Tungpalan, 1984:138.—Abbott, 1985:89.—Trono and Ganzon-Fortes, 1985:66.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Ilocos Sur, La Union, Pangasinan, Bataan, Batangas, Quezon, Sorsogon. MARIN-DUQUE. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SAMAR: Northern Samar, Western Samar, Eastern Samar. LEYTE (incl. Biliran I.). PANAY: Aklan. NEGROS: Negros Occidental (incl. Ilacaon I.), Negros Oriental. CEBU (incl. Mactan I.). SQUIJOR. MINDANAO: Zamboanga (incl. Sacol I.), Misamis Occidental. PALAWAN (incl. Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi.

***Gracilaria foliifera* (Forsskål) Børgesen**

Fucus foliifer Forsskål, 1775:191 [type locality: Mokha, Yemen].

Gracilaria foliifera (Forsskål) Børgesen, 1932:7.

Fucus lacinulatus Vahl, 1802:39 [type locality: St. Croix, Virgin Is.].

Gracilaria lacinulata (Vahl) Howe, 1920:562.—Weber-van Bosse, 1928:434.—Velasquez, Trono, and Doty, 1975:146.—Trono and Fortes, 1980:73.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:153.—Abbott, 1985:89.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

NOTE.—The synonymy was proposed by Børgesen (1932:7).

***Gracilaria foliifera* (Forsskål) Børgesen
f. *aeruginosa* (Turner) Børgesen**

Fucus aeruginosus Turner, 1811:29, pl. 147 [syntype localities: Portugal; Red Sea].

Gracilaria foliifera (Forsskål) Børgesen f. *aeruginosa* (Turner) Børgesen, 1938:226.

Gracilaria multipartita (Clemente y Rubio) Harvey var. *aeruginosa* (Turner) J. Agardh, 1852 [1851–1863]:601.—Grunow, 1867:83.

PHILIPPINE DISTRIBUTION.—LUZON.

***Gracilaria gigas* Harvey**

Gracilaria gigas Harvey, 1860a:331 [type locality: Shimoda, Shizuoka Prefecture, Japan].—Kraft, 1972:332.—Trono, Azanza-Corrales, and Manuel, 1983:31, figs. 6, 11a.—Abbott, 1985:89, fig. 39.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Sorsogon.

***Gracilaria incurvata* Okamura**

Gracilaria incurvata Okamura, 1931 [1929–1932]:41, pl. CCLXXXIII: figs. 1–6 [syntype localities: various, all in Japan].—Cordero, 1984a:101.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Gracilaria minor* (Sonder) Durairatnam**

Corallopsis salicornia (C. Agardh) Greville var. *minor* Sonder, 1871:56, pl. III: figs. 6–11 [type locality: Cape York, Queensland, Australia].

Corallopsis minor (Sonder) J. Agardh, 1876:409.—Piccone, 1886:68, 90.—Velasquez, Trono, and Doty, 1975:138.

Gracilaria minor (Sonder) Durairatnam, 1961:64.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

***Gracilaria papenfussii* Abbott**

Gracilaria papenfussii Abbott, 1983:562, figs. 1–3 [type locality: La Jolla, California, USA].

Gracilaria andersonii [misapplied name fide Abbott, 1983:562].—Cordero, 1977a:123, figs. 96, 97.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

****Gracilaria salicornia* (C. Agardh) Dawson**

Sphaerococcus salicornia C. Agardh, 1820a: pl. VIII [type locality: said to be Unalaska, Aleutian Is., but probably Manila, Luzon].

Corallopsis salicornia (C. Agardh) Greville, 1830:liii.—Cantoria, Velasquez, and Valenzuela, 1951:296, footnote.

Gracilaria salicornia (C. Agardh) Dawson, 1954a:4, fig. 3 [including Philippine record].—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Galutira and Velasquez, 1964:506, pl. 5: figs. 15a, 15b; pl. 8: figs. 32a, 32b.—Velasquez, 1968a:121, fig. 7.—Villones and Magdamo, 1968:28, fig. 28.—Velasquez, 1971:448, fig. 31.—Reyes, 1972:155.—Trono, 1972a:104.—Velasquez, 1972:63.—Trono, 1973d:18, pl. 9: fig. 3.—Trono and Biña, 1973:9.—Velasquez et al., 1973:30, pl. 13: fig. 62.—De Leon, 1974:31, 33, photo [s.n.], fig. [s.n.].—Ortega, Alcalá, and Reyes, 1974:185.—Trono, 1974b:90; 1974e:18.—Velasquez, Trono, and Doty, 1975:146.—Cordero, 1977a:132, figs. 116–118, pl. XIX:c.—Tahil, 1978:52.—Vannajan and Trono, 1978:22, fig. 24.—Cordero, 1979b:276.—Puig and Cordero, 1979:41.—Trono and Azanza-Corrales, 1979:26.—Velasquez, 1979b:231.—Cordero, 1980b:57, fig. 22, pl. 38.—Fortes and Trono, 1980:60.—Liao and Sotto, 1980:99.—Reyes, 1980:135, pl. 9: fig. 4.—Trono and Fortes, 1980:73.—Trono and Ganzon-Fortes, 1980:93, fig. [s.n.].—Trono, Velasquez, and Guevarra, 1980:78.—Ganzon-Fortes, 1981:22.—Guzman, 1981:43.—Meñez and Calumpong, 1981:381.—Trono, 1981b:55 (table 1).—Trono and Azanza-Corrales, 1981:743.—Trono and De Lara, 1981:18.—Calumpong, 1982:145.—Cordero, 1982a:60, 61.—Trono and Fortes, 1982:153.—Hurtado-Ponce, 1983:141.—Trono, Azanza-Corrales, and Manuel, 1983:23, figs. 3, 4b.—Cordero, 1984a:102; 1984c:55.—Hurtado-Ponce, 1984:180.—Marcos-Agngarayngay, 1984a:48, fig. 40; 1984b:127.—Abbott, 1985:89, fig. 42.—Trono and Ganzon-Fortes, 1985:66.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte, Pangasinan, Zambales, Bataan, Rizal, Cavite, Quezon, Batangas, Sorsogon. MINDORO: Occidental Mindoro (incl. Lubang Is.), Oriental Mindoro. MASBATE. SAMAR:

Western Samar, Eastern Samar. LEYTE (incl. Biliran I.). PANAY: Aklan, Iloilo. NEGROS: Negros Occidental (incl. Ila-caon I., Suyac I.), Negros Oriental (incl. Apo I.). CEBU (incl. Mactan I.). SIQUIJOR. MINDANAO: Zamboanga (incl. Sacol I.), Misamis Occidental, Surigao del Sur, Davao (incl. Samal I.). PALAWAN (incl. Cuyo I.). SULU: Sulu (Siasi I.).

NOTE.—The type specimen of *Sphaerococcus salicornia* was said by Agardh to have been collected by Chamisso at Unalaska (during the voyage of the *Rurik*), but Dawson (1954a:5) showed that the provenance probably was Manila. The *Rurik* remained at Manila from 17 December 1817 to 29 January 1818, following its voyage from Unalaska by way of Hawaii and Guam.

***Gracilaria spinigera* Dawson**

Gracilaria spinigera Dawson, 1949a:24, pl. 8: figs. 1–3, 5; pl. 9: figs. 1–3 [type locality: Guaymas, Sonora, Mexico].—Cordero, 1977a:134, fig. 119, pl. XXI:A; 1980b:58, fig. 23, pl. [52]; 1984a:102.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Gracilaria spinulosa* (Okamura) Chang and Xia**

Rhodymenia spinulosa Okamura, 1934 [1933–1942]:33, pl. 318: figs. 1–6 [type locality: Tainan, Taiwan].—Meñez, 1961:78.—Velasquez, Trono, and Doty, 1975:162.—Meñez and Calumpong, 1981:381.

Gracilaria spinulosa (Okamura) Chang and Xia, 1976:148.

Gracilaria purpurascens J. Agardh, 1885:63 [type locality: Sri Lanka].—Cordero, 1977a:130, fig. 115.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. NEGROS: Negros Oriental. CENTRAL VISAYAS.

NOTE.—*Rhodymenia spinulosa* was referred to *Gracilaria* by Yamada (1941a:204) as a form of *G. purpurascens* J. Agardh. The latter name, however, is a later homonym of *G. purpurascens* Greville (1830:liv) and must be replaced.

***Gracilaria textorii* (Suringar) De Toni**

Sphaerococcus textorii Suringar, 1867:259 [type locality: Japan].

Gracilaria textorii (Suringar) De Toni, 1895a:27.—Cordero, 1977a:135; 1980b:59, pl. [58] [*G. textorii* prox.]; 1984a:102.—Marcos-Agngarayngay, 1984b:128 [*G. textorii* prox.].—Tungpalan, 1984:138.—Abbott, 1985:90, fig. 26.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Gracilaria turgida* Dawson**

Gracilaria turgida Dawson, 1949a:14, pl. 21; pl. 24: fig. 1 [type locality: Newport-Balboa, Orange County, California, USA].—Saraya and Trono, 1982:40, pl. VI: fig. 3.—Abbott, 1985:90.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Gracilaria venezuelensis* W.R. Taylor**

Gracilaria venezuelensis W.R. Taylor, 1942:110, pl. 3: fig. 10 [type locality: Isla Cubagua, Venezuela].—Westernhagen, 1973a:65; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Gracilaria verrucosa* (Hudson) Papenfuss**

Fucus verrucosus Hudson, 1762:470 [type locality: England].

Gracilaria verrucosa (Hudson) Papenfuss, 1950:195.—Galutira and Velasquez, 1964:507, pl. 4: fig. 13; pl. 8: fig. 33.—Velasquez, 1968a:121, fig. 8.—Villones and Magdamo, 1968:29, fig. 29.—De Leon and Domantay, 1971:5, 9.—Velasquez, 1971:448, fig. 32.—Cornejo and Velasquez, 1972:180.—Reyes, 1972:155.—Velasquez, 1972:63.—Cordero, 1973b:33.—Velasquez et al., 1973:30, pl. 13: fig. 61.—Westernhagen, 1973a:65.—Trono, 1974e:18.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:146.—Cordero, 1976c:8, 10; 1977a:135; 1978a:37.—Vannajan and Trono, 1978:22, fig. 18.—Laserna et al., 1978:111.—Cordero, 1979b:276, 292.—Garcia, 1979:45 (table I).—Puig and Cordero, 1979:41.—Trono and Azanza-Corrales, 1979:26.—Velasquez, 1979b:231.—Cordero, 1980b:59, pl. 39.—Liao and Sotto, 1980:99.—Reyes, 1980:135, pl. 9: fig. 6.—Trono and Fortes, 1980:74.—Trono, Velasquez, and Guevarra, 1980:78.—Ganzon-Fortes, 1981:22.—Guzman, 1981:42, 46, 47.—Laserna et al., 1981:443.—Meñez and Calumpung, 1981:381.—Trono, 1981b:55 (table I).—Trono and Azanza-Corrales, 1981:743.—Calumpung, 1982:145.—Cordero, 1982a:60, 61.—Luistro, Cajipe, and Laserna, 1982:46.—Trono and Fortes, 1982:153.—Hurtado-Ponce, 1983:142.—Trono, Azanza-Corrales, and Manuel, 1983:17, figs. 1, 4a.—Cordero, 1984a:102.—Hurtado-Ponce, 1984:180.—Marcos-Agngarayngay, 1984a:50, fig. 41; 1984b:128.—Tungpalan, 1984:138.—Abbott, 1985:90, fig. 9.—Trono and Ganzon-Fortes, 1985:64, 66.

Fucus confervoides Linnaeus, 1763:1629 [type locality: England].

Ceramium confervoides Wiggers, 1780:91.

Sphaerococcus confervoides (Wiggers) Stackhouse, 1797 [1795–1801: xxiv.—Martens, 1868:94–95.—Velasquez, Trono, and Doty, 1975:163.

Gracilaria confervoides (Wiggers) Greville, 1830:liv.—Montagne, 1844a:662.—Seale, 1911:309.—Wester, 1916:158; 1921:224; 1924:21.—G. Blanco, 1938:512.—De Leon, Leyva, and Martinez-Pesigan, 1947:381.—Abagon, Buñag, and De Vera, 1951:41.—Quisumbing, 1951:1010.—Montilla and Blanco, 1953:166.—Velasquez, 1953a:100; 1953b:206.—Villaluz, 1953:186, 187.—Sulit, Salcedo, and Panganiban, 1956:280.—Zaneveld, 1956:36; 1959:117.—Domantay, 1968:25.—De Leon and Domantay, 1971:5, 9.—Bersamin et al., 1973:186.—Sulit, Salcedo, and Panganiban, 1973:177–182.—Westernhagen, 1973a:65; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:146.—Abbott, 1985:89.

**Fucus gulaman* M. Blanco, 1837:839 [syntype localities: Tambobo ("Tambobon") and Parañaque, Rizal Prov., Luzon] [probable taxonomic synonym].—Montilla and Blanco, 1953:166.—Velasquez, Trono, and Doty, 1975:144.

Fucus edulis [probable misapplied name fide Merrill, 1918:41].—M. Blanco, 1845:580; 1879:260.—Velasquez, Trono, and Doty, 1975:144.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Pangasinan, Bataan, Pampanga, Bulacan, Rizal, Manila, Cavite, Batangas, Quezon, Albay (Batan I.). MINDORO: Occidental Mindoro, Oriental Mindoro. SAMAR: Western Samar, Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU

(incl. Mactan I.). SIKUJOR. MINDANAO: Zamboanga. PALAWAN. SULU.

NOTE.—The synonymy was proposed by Papenfuss (1950:195). *Fucus confervoides* Linnaeus, the intended basionym of *Gracilaria confervoides* (and other combinations), is a later homonym of *F. confervoides* Hudson (1762:474) and hence not priorable. *Ceramium confervoides* Wiggers is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN. Although the Tagalog word "gulaman" is applied to various red algae that are rich in hydrocolloids, Blanco's description of *F. gulaman* appears to apply, at least in part, to the stringy *Gracilaria* currently called *G. confervoides* or *G. verrucosa*. Martens (1868:45–46) thought that it applied to two species, *Sphaerococcus gelatinus* (= *Eucheuma gelatinum*) and *S. lichenoides* (= *Gracilaria edulis*), while Seale (1911:309) and Quisumbing (1951:1007) thought that it applied to a species of *Agardhiella*. In the absence of authentic specimens, a definitive placement is impossible.

***Gracilaria vieillardii* P.C. Silva, new name**

Sphaerococcus denticulatus Kützinger, 1869:19, pl. 51: figs. e–g [type locality: New Caledonia].

Gracilaria denticulata (Kützinger) Weber-van Bosse, 1928:432 [replaced name].—Cordero, 1976c:10; 1977a:128, fig. 109; 1978a:36.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—*Gracilaria vieillardii* is proposed as a substitute name for *G. denticulata* (Kützinger) Weber-van Bosse, a later homonym of *G. denticulata* Schmitz ex Mazza (1907:138).

Polycavernosa* Chang and Xia**Polycavernosa debilis* (Forsskål) Fredericq and J. Norris**

Fucus debilis Forsskål, 1775:191 [type locality: Mokha, Yemen].

Gracilaria debilis (Forsskål) Børgesen, 1932:7.—Taylor, 1977b:13.

Polycavernosa debilis (Forsskål) Fredericq and J. Norris, 1985:152.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

NOTE.—Xia and Abbott (1985) support the segregation of *Polycavernosa* from *Gracilaria* on the basis of the origin of the compound spermatangial conceptacles from inner or medullary cells and the indirect origin of the gonimoblast from the fusion cell.

Family PLOCAMIACEAE***Plocamium* Lamouroux*****Plocamium costatum* (C. Agardh) J. Hooker and Harvey**

Delesseria plocamium (S.G. Gmelin) C. Agardh var. *costata* C. Agardh, 1822a:181 [type locality: Western Australia, Australia].

Plocamium costatum (C. Agardh) J. Hooker and Harvey, 1847:404.—Cordero, 1977a:140, fig. 127, pl. XXI:B.

PHILIPPINE DISTRIBUTION.—BATANES.

****Plocamium patens* Martens**

Plocamium patens Martens, 1868:32 [type locality: Zamboanga, Mindanao].—Velasquez, Trono, and Doty, 1975:160.

PHILIPPINE DISTRIBUTION.—As above.

****Plocamium serrulatum* Okamura var. *pectinatum* Cordero**

Plocamium serrulatum Okamura var. *pectinatum* Cordero, 1977a:140, figs. 128, 129 [type locality: Batan I., Batanes Prov., Luzon].—Cordero, 1978a:38 (as unnamed variety).

PHILIPPINE DISTRIBUTION.—As above.

NOTE.—This name was previously published without a description by Cordero (1976c:8, 9, 11 [*pectinata*]).

***Plocamium telfairiae* (W. Hooker and Harvey) Harvey ex Kützing**

Thamnophora telfairiae W. Hooker and Harvey in Harvey, 1834a:149, pl. CXXV [type locality: Cap Malheureux, Mauritius].

Plocamium telfairiae (W. Hooker and Harvey) Harvey ex Kützing, 1849:885.—Cordero, 1977a:141; 1978a:38.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Bataan, Batangas. MINDORO: Oriental Mindoro. PALAWAN.

Family SARCODIACEAE

***Sarcodia* J. Agardh**

***Sarcodia montagneana* (J. Hooker and Harvey) J. Agardh**

Rhodymenia montagneana J. Hooker and Harvey, 1845b:544 [*Rhodymenia*] [type locality: Bay of Islands, New Zealand].

Sarcodia montagneana (J. Hooker and Harvey) J. Agardh, 1852 [1851–1863]:623.

Sarcodia ceylanica Harvey ex Kützing, 1869:12, pl. 33: figs. *a*, *b* [type locality: Sri Lanka].—Cordero, 1977a:116.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—The synonymy was proposed by Yendo (1917:82) and maintained by Børgesen (1954:28).

Family SOLIERIACEAE

***Callophycus* Trevisan**

***Callophycus serratus* (Harvey ex Kützing) P.C. Silva**

Thysanocladia serrata Harvey ex Kützing, 1869:10, pl. 29: figs. *a*, *b* [type locality: Tonga].

Callophycus serratus (Harvey ex Kützing) P.C. Silva, 1957:143.—Kraft, 1984:54, 56, figs. 3–5, 7, 10–16.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon.

***Eucheuma* J. Agardh**

***Eucheuma alvarezii* Doty**

Eucheuma alvarezii Doty, 1985:37, figs. 1–6 [including Philippine record] [type locality: Creagh Reef, Sabah, Malaysia].

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi.

****Eucheuma alvarezii* Doty var. *ajakii-assii* Doty**

Eucheuma alvarezii Doty var. *ajakii-assii* Doty, 1985:42, fig. 8 [*ajak-assi*] [type locality: Tumindao I., Tawitawi Prov.].

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi.

****Eucheuma alvarezii* Doty var. *tambalangii* Doty**

Eucheuma alvarezii Doty var. *tambalangii* Doty, 1985:41, fig. 7 [*tambalang*] [type locality: Calatagan, Batangas Prov.].

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. SULU: Tawitawi.

NOTE.—The varietal epithets of the two foregoing taxa commemorate three persons named Ajak, Assi, and Tambalang and therefore are to be written *ajakii-assii* and *tambalangii* in accordance with Article 73.10 of the ICBN. We doubt the wisdom or usefulness of giving formal taxonomic recognition to horticultural strains, which these varieties seem to be.

***Eucheuma arnoldii* Weber-van Bosse**

Eucheuma arnoldii Weber-van Bosse, 1928:421, pl. XIII: fig. 1 [type locality: Gisser (Gesser) I., near Ceram, Indonesia].—Kraft, 1972:318–334, figs. 1–18.—Trono, 1973d:19; 1974c:328, 333; 1974d:4; 1974e:18.—Cordero, 1977a:151, fig. 144, pl. XXIV:d.—Smith and Pestaño-Smith, 1980:7.—Trono and Fortes, 1980:72.—Ganzon-Fortes, 1981:22.—Meñez and Calumpong, 1981:381.—Calumpong, 1982:145.—Saraya and Trono, 1982:38.—Trono and Ang, 1982:17.—Trono and Fortes, 1982:151.

Eucheuma cupressoideum Weber-van Bosse, 1928:421, pl. XIV: fig. 3 [type locality: Torres Strait].—Kraft, 1972:321, 323.—Cordero, 1977a:153, figs. 147, 150; 1984a:98.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan. MINDORO: Oriental Mindoro. NEGROS: Negros Occidental (Ilacon I.), Oriental Mindoro. CEBU. BOHOL. PALAWAN (Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—The synonymy was proposed by Kraft (1972).

****Eucheuma arnoldii* Weber-van Bosse var. *alcyonida* Kraft**

Eucheuma arnoldii Weber-van Bosse var. *alcyonida* Kraft, 1972: 323, figs. 5, 11 [type locality: Bulusan, Sorsogon Prov., Luzon].

PHILIPPINE DISTRIBUTION.—As above.

***Eucheuma cottonii* Weber-van Bosse**

Eucheuma cottonii Weber-van Bosse, 1913b:115, pl. 12: fig. 2 [syntype localities: Saya de Malha and Cargados Carajos, Indian Ocean].—Doty, 1969:4, figs. A, D.—De Leon and Domantay, 1971:5, 11.—Velasquez, 1971:449.—Kraft, 1972:326, 327, 329, 332.—Cordero, 1973b:32.—Trono, 1973d:19, pl. 12: figs. 13, 15.—Trono and Biña, 1973:7.—Westernhagen, 1973a:65.—Trono, 1974b:92; 1974c:333; 1974d:4; 1974e:18, 19.—Westernhagen, 1974:112 (table I).—Cordero, 1979b:276.—Ricohermoso and Deveau, 1979:525.—Smith and Pestaño-Smith, 1980:7.—Trono and Fortes, 1980:72.—Donaire, 1981:166.—Ganzon-Fortes, 1981:22.—Meñez and Calumpung, 1981:381.—Laite and Ricohermoso, 1981:595.—Calumpung, 1982:145.—Saraya and Trono, 1982:38.—Trono and Ang, 1982:17.—Trono and Fortes, 1982:151.—Doty and Norris, 1985:figs. 5, 6.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Sorso-gon. MINDORO: Oriental Mindoro. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Occidental (Ilacon I.). CEBU (Mactan I.). BOHOL. MINDANAO: Zamboanga. PALAWAN (Bugsuk I., Cabulauan I.). SULU: Sulu (Siasi I.), Tawitawi.

Eucheuma cottonii* var. *erecta

Eucheuma cottonii var. *erecta*—De Leon, 1974:30, 32, photo [s.n.].

PHILIPPINE DISTRIBUTION.—PALAWAN.

NOTE.—De Leon did not give an author for this name and we have been unable to find its place of publication.

***Eucheuma crassum* Zanardini**

Eucheuma crassum Zanardini, 1878:36 [type locality: Aru Is., Indonesia].—Westernhagen, 1973a:65.—Cordero, 1977a:151, fig. 145, pl. XXIII:A.—Meñez and Calumpung, 1981:381.—Calumpung, 1982:145.—Cordero, 1984a:97 [with query].

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. NEGROS: Negros Oriental. CEBU (Mactan I.).

***Eucheuma crustiforme* Weber-van Bosse**

Eucheuma crustiforme Weber-van Bosse, 1928:415, fig. 165 ["*crustaeforme*"] [type locality: Great Sangir (Sangihe) I., Indonesia].—Westernhagen, 1973a:65; 1974:112 (table I).—Cordero, 1977a:153, fig. 146.—Puig and Cordero, 1979:39.—Cordero, 1984a:98 ["(?) *cristaeforme*"].

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Batangas. LEYTE (incl. Biliran I.). CEBU (Mactan I.).

***Eucheuma denticulatum* (N.L. Burman) Collins and Hervey**

Fucus denticulatus N.L. Burman, 1768:28 [bis] [type locality: said to be Cape of Good Hope, South Africa, but probably in error].—Velasquez, Trono, and Doty, 1975:144.

Eucheuma denticulatum (N.L. Burman) Collins and Hervey, 1917:106.—Pelayo and Lantican, 1981:3.

Fucus spinosus Linnaeus, 1771:313 [superfluous name].

Eucheuma spinosum J. Agardh, 1847:16 ["*spinosus*"].—Heydrich, 1894:293.—Seale, 1911:309.—Wester, 1916:159; 1921:224; 1924:

21.—G. Blanco, 1938:512.—Quisumbing, 1951:1010.—Montilla and Blanco, 1953:166.—Domantay, 1962:289.—Doty, 1969:6, figs. B, C.—DeLeon and Domantay, 1971:5, 12.—Velasquez, 1971:449.—Trono, 1972a:105.—Westernhagen, 1973a:65.—Parker, 1974:434 (table I).—Trono, 1974b:92.; 1974c:328, 333; 1974d:4; 1974e:18.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:143.—Laserna et al., 1978:111.—Ricohermoso and Deveau, 1979:525.—Liao and Sotto, 1980:99.—Smith and Pestaño-Smith, 1980:7.—Trono and Fortes, 1980:72.—Veroy et al., 1980:59.—Donaire, 1981:166.—Ganzon-Fortes, 1981:22.—Guzman, 1981:43.—Laite and Ricohermoso, 1981:595.—Laserna et al., 1981:445.—Lim and Porse, 1981:603.—Trono, 1981b:53.—Uyenco, Saniel, and Jacinto, 1981a:69.—Uyenco [Uyengco], Saniel, and Jacinto, 1981b:627.—Saraya and Trono, 1982:37.—Trono and Fortes, 1982:152.—Trono and Ganzon-Fortes, 1985:62, 64, 65, fig. [s.n.].

Fucus muricatus S.G. Gmelin, 1768:111, pl. VI: fig. 4 [type locality: "Oceanus Indicus"].

Eucheuma muricatum (S.G. Gmelin) Weber-van Bosse, 1928:413 [including Philippine record].—Howe, 1932:169.—Zaneveld, 1956:31; 1959:111.—Domantay, 1962:289.—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Galutira and Velasquez, 1964:505, pl. 4: fig. 11; pl. 8: fig. 30.—Velasquez, 1968a:122, fig. 10; 1971:448, fig. 33; 1972:63.—Velasquez et al., 1973:31, pl. 13: fig. 64.—De Leon, 1974:30, 33, photo [s.n.], 2 figs. [s.n.].—Velasquez, Trono, and Doty, 1975:143.—Cordero, 1977a:156, fig. 154.—Velasquez, 1979b:231.—Cordero, 1980b:50, fig. 14, pls. 32, [54].—Trono, Velasquez, and Guevarra, 1980:79.—Cordero, 1982a:60, 61, fig. 11.—Trono and Ang, 1982:17.—Hurtado-Ponce, 1983:143.—Cordero, 1984a:98.—Hurtado-Ponce, 1984:180.—Marcos-Angaranygay, 1984a:43, fig. 35; 1984b:129.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, La Union, Pangasinan, Bataan. MINDORO: Occidental Mindoro. PANAY: Aklan. CEBU (Mactan I.). SIQUIJOR. BOHOL. MINDANAO: Zamboanga, Davao. PALAWAN (Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—*Fucus spinosus* Linnaeus, the intended basionym of *Eucheuma spinosum*, is a later homonym of *F. spinosus* S.G. Gmelin (1768:161, pl. XVIII: fig. 3) and hence not priorable. *Eucheuma spinosum* J. Agardh is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN. *Fucus spinosus* Linnaeus is not only a later homonym, but also an illegitimate substitute for *F. denticulatus* N.L. Burman. The conspecificity of *F. denticulatus* and *E. muricatum* was first proposed by C. Agardh (1822a:271). Both names were published in 1768, with the Burman publication having priority (1 March–6 April vs. after 1 May). The specimen figured by Cordero (1980b: pl. 32) with the caption "*E. muricatum* var." is listed under *E. gelatinae* in the text.

TAXA OF UNCERTAIN VALUE

The following two infraspecific taxa are probably related to *Eucheuma denticulatum* but have not been formally transferred to it.

***Eucheuma muricatum* (S.G. Gmelin) Weber-van Bosse f. *depauperatum* Weber-van Bosse**

Eucheuma muricatum (S.G. Gmelin) Weber-van Bosse f. *depauperatum* Weber-van Bosse, 1928:415, pl. XII: fig. 5 ["*depauperata*"] [type locality:

Ryukyu-retto, Japan].—Domantay, 1962:289.—Cordero, 1977a:156, fig. 155.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan. SIKUIJOR.

Eucheuma muricatum (S.G. Gmelin) Weber-van Bosse
f. *incrassatum* Yamada

Eucheuma muricatum (S.G. Gmelin) Weber-van Bosse f. *incrassatum* Yamada, 1936a:124, figs. 4, 5, pl. 23: fig. 1 [*"incrassata"*] [syntype localities: Miyako-jima and Okinawa-jima, Ryukyu-retto, Japan].—Cordero, 1977a:158, figs. 156, 157, pl. XXIII:B; 1980b:50, fig. 15, pl. 33.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Cagayan.

Eucheuma edule (Kützing) Weber-van Bosse

Chondrus edulis Kützing, 1867:19, pl. 63: figs. c-e [type locality: New Caledonia].

Eucheuma edule (Kützing) Weber-van Bosse, 1926:136.—Meñez, 1961:73.—Westernhagen, 1973a:65; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:143.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CEBU (Mactan I.).

Eucheuma gelatinum (Esper) J. Agardh

Fucus gelatinus Esper, 1800:188, pl. CI [type locality: not specified].

Sphaerococcus gelatinus (Esper) C. Agardh, 1822a:270.—Martens, 1868:46, 94–95.—Velasquez, Trono, and Doty, 1975:163.

Eucheuma gelatinum (Esper) J. Agardh, 1847:16 [*"gelatinae"*].—Zaneveld, 1956:31; 1959:111.—Domantay, 1962:289.—De Leon and Domantay, 1971:5, 11.—Westernhagen, 1973a:65 [with query]; 1974:112 (table I) [with query].—Velasquez, Trono, and Doty, 1975:143.—Cordero, 1976c:10; 1977a:153, figs. 151, 152, pl. XXIV:c; 1978a:39; 1980b:49, fig. 13, pl. [53].—Guzman, 1981:44 [*"galatinae"*].—Cordero, 1984a:98.—Marcos-Agngarayngay, 1984a:41, fig. 34; 1984b:128.—Tungpalan, 1984:145.

Gigartina gelatinosa Endlicher, 1843:42 [illegitimate nomenclatural synonym].—Montagne, 1844a:662.—Velasquez, Trono, and Doty, 1975:145.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Rizal. CEBU (Mactan I.). MINDANAO: Zamboanga.

NOTE.—When establishing the genus *Eucheuma*, J. Agardh (1847:16) treated the name as feminine. Later (J. Agardh, 1852 [1851–1863]:624), he treated it as neuter, the gender most often assigned to it by subsequent authors. The neuter ending of the adjective *gelatinus* is *gelatinum*. J. Agardh's incorrect spelling *gelatinae* has persisted to the present.

Eucheuma horridum J. Agardh

Eucheuma horridum J. Agardh, 1852 [1851–1863]:625 [type locality: Mauritius].—Cordero, 1977a:155, figs. 148, 149.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

Eucheuma isiforme (C. Agardh) J. Agardh

Sphaerococcus isiformis C. Agardh, 1822a:271 [type locality: West Indies].

Eucheuma isiforme (C. Agardh) J. Agardh, 1847:16 [*"isiformis"*].—Reyes, 1972:157.—Velasquez, Trono, and Doty, 1975:143.—Cordero, 1977a:155, fig. 153, pl. XXIV:B; 1982a:60, 61.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental. SULU.

Eucheuma leeuwenii Weber-van Bosse

Eucheuma leeuwenii Weber-van Bosse, 1928:410, figs. 161, 162 [type locality: Nusa Kambangan, Java, Indonesia].—Westernhagen, 1973a:65; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Eucheuma okamurai Yamada

Eucheuma okamurai Yamada, 1936a:125, figs. 8, 9, pls. 26, 27 [*"okamurai"*] [type locality: Miyako-jima, Ryukyu-retto, Japan].—Domantay, 1962:289.—De Leon and Domantay, 1971:5, 10.—Velasquez, Trono, and Doty, 1975:143.—Cordero, 1977a:159, fig. 158, pl. XXII:B.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

**Eucheuma procrusteanum* Kraft

Eucheuma procrusteanum Kraft, 1970:215, figs. 1–7 [type locality: Semirara Is., Antique Prov., Panay].—Trono, 1974c:328; 333; 1974d:4; 1974e:17, 18.—Velasquez, Trono, and Doty, 1975:143.—Trono and Fortes, 1980:72.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:151.

PHILIPPINE DISTRIBUTION.—PANAY: Antique (Semirara Is.). SULU: Sulu (Siasi I.).

Eucheuma serra (J. Agardh) J. Agardh

Sphaerococcus serra J. Agardh, 1841:17 [type locality: "in mari Indiae orientalis"].

Eucheuma serra (J. Agardh) J. Agardh, 1847:16.—Cordero, 1973b:32.—Trono, 1973d:19, pl. 12: fig. 14.—De Leon, 1974:30, 31, photo [s.n.], fig. [s.n.].—Trono, 1974c:333; 1974d:4; 1974e:17, 18.—Cordero, 1976c:10; 1977a:159, fig. 165; 1978a:39.—Puig and Cordero, 1979:40.—Trono and Fortes, 1980:72.—Ganzon-Fortes, 1981:22.—Trono and Ang, 1982:16.—Trono and Fortes, 1982:151.—Cordero, 1984c:55.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Sorsogon. MASBATE. LEYTE (Biliran I.). PALAWAN (Bugsuk I.).

Eucheuma striatum Schmitz

Eucheuma striatum Schmitz, 1895:151 [*"striata"*] [type locality: Zanzibar, Tanzania].—Domantay, 1962:289.—Trono, 1972a:105.—Doty and Alvarez, 1973: fig. 2.—Westernhagen, 1973a:65 [with query].—Colina, 1974:109.—De Leon, 1974:30, 31, photo [s.n.].—Parker, 1974:434 (table I).—Trono, 1974b:91; 1974c:328, 333; 1974d:4; 1974e:18, 19.—Westernhagen, 1974:112 (table I) [with query].—Colina,

1975:125.—Velasquez, Trono, and Doty, 1975:143.—Colina, 1976:50.—Cordero, 1976c:10; 1977a:160, fig. 159; 1978a:39.—Laserna et al., 1978:111.—Garcia, 1979:45 (table 1).—Cordero, 1980b:51, fig. 16, pl. [59].—Liao and Sotto, 1980:99.—Trono and Fortes, 1980:72.—Trono and Ganzon-Fortes, 1980:75, fig. [s.n.].—Veroy et al., 1980:59.—Donaire, 1981:166.—Doty and Alvarez, 1981:688.—Ganzon-Fortes, 1981:22.—Guzman, 1981:43.—Laserna et al., 1981:445.—Lim and Porse, 1981:603.—Pelayo and Lantican, 1981:3.—Trono, 1981b:53.—Uyenco, Saniel, and Jacinto, 1981a:69.—Uyenco [Uyengco], Saniel, and Jacinto, 1981b:627.—Luis-tro, Cajipe, and Laserna, 1982:46.—Cordero, 1982a:60, 61.—Trono and Ang, 1982:17.—Trono and Fortes, 1982:152.—Cordero, 1984a:99; 1984c:55.—Marcos-Agngarayngay, 1984a:43, fig. 36; 1984b:129.—Tungpalan, 1984:145.—Trono and Ganzon-Fortes, 1985:62, 64, 65, fig. [s.n.].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Batangas. MASBATE. CEBU (incl. Mactan I.). BOHOL. MINDANAO: Zamboanga. PALAWAN (Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi.

Meristotheca J. Agardh

Meristotheca papulosa (Montagne) J. Agardh

Kallymenia papulosa Montagne, 1850:246 ["*Callymenia*"] [type locality: Hodeida, Yemen].

Meristotheca papulosa (Montagne) J. Agardh, 1872:37.—Velasquez et al., 1973:31, pl. 14, fig. 56.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan.

Solieria J. Agardh

Solieria dura (Zanardini) Schmitz

Rhabdonia dura Zanardini, 1858:278, pl. XI: fig. 1 [syntype localities: Hodeida and Mokha, Yemen].—Piccone, 1886:78, 90.—Velasquez, Trono, and Doty, 1975:161.

Solieria dura (Zanardini) Schmitz, 1895:139.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

Family CAULACANTHACEAE

Catenella Greville

Catenella caespitosa (Withering) L. Irvine

Ulva caespitosa Withering, 1776:735 [type locality: Anglesey, Wales].

Catenella caespitosa (Withering) L. Irvine, 1976:590.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:381.

Fucus opuntia Goodenough and Woodward, 1797:107, 219 [type locality: Tenby, Wales].

Catenella opuntia (Goodenough and Woodward) Greville, 1830:lxiii.—Post, 1936:73, 76, 78; 1939:34.—Cordero, 1977a:163, figs. 168, 169.—Fortes and Trono, 1980:59.—Reyes, 1980:134, pl. 9: fig. 3.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon. MINDORO: Oriental Mindoro. SIKUIJOR. PALAWAN.

NOTE.—The synonymy was proposed by Irvine (1976).

Catenella impudica (Montagne) J. Agardh

Lomentaria impudica Montagne, 1840:197 [type locality: Cayenne, French Guiana].

Catenella impudica (Montagne) J. Agardh, 1852 [1851–1863]:701.—Post, 1936:66, 68; 1938:213.—Cordero, 1977a:163, fig. 161.—Vannajan and Trono, 1978:18, fig. 19.—Trono and Fortes, 1980:71.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:151.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Rizal, Manila. SULU: Sulu.

Catenella nipae Zanardini

Catenella nipae Zanardini, 1872:143, pl. VI:A [type locality: Sarawak, Malaysia].—Post, 1938:214.—Quisumbing, 1951:1007.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal. PANAY: Iloilo.

Family CYSTOCLONIACEAE

Rhodophyllis Kützting

Rhodophyllis peltata Grunow var. *lacunosa* Grunow

Rhodophyllis peltata Grunow var. *lacunosa* Grunow, 1874:34 [type locality: Tongatapu, Tonga].—Weber-van Bosse, 1928:403.—Velasquez, Trono, and Doty, 1975:161 [without designation of variety].

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Capual I.).

Family HYPNEACEAE

Hypnea Lamouroux

Hypnea boergesenii Tanaka

Hypnea boergesenii Tanaka, 1941:233, figs. 6–8, pl. 53: fig. 1 [syntype localities: Keelung (Chi-lung) and Tairi, Taiwan].—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

Hypnea cenomyce J. Agardh

Hypnea cenomyce J. Agardh, 1851 [1851–1863]:452 [type locality: "ad oras Novae Hollandiae" (Australia)].—Zaneveld, 1956:41; 1959:121.—Cordero, 1977a:143, fig. 130; 1979b:291; 1980b:52.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro. PANAY: Aklan. SIKUIJOR.

**Hypnea cenomyce* J. Agardh var. *tenuis* Weber-van Bosse

Hypnea cenomyce J. Agardh var. *tenuis* Weber-van Bosse, 1928:456, fig. 194 [syntype localities: Muaras Reef, East Kalimantan, Indonesia; Sangasipu I., Tawitawi Prov., Sulu Archipelago].

PHILIPPINE DISTRIBUTION.—As above.

***Hypnea cervicornis* J. Agardh**

Hypnea cervicornis J. Agardh, 1851 [1851–1863]:451 [syntype localities: Brazil; West Indies; Mexico; Mauritius].—Weber-van Bosse, 1928:454.—Zaneveld, 1956:42; 1959:121.—Velasquez et al., 1973:31, pl. 14: fig. 66.—Westernhagen, 1973a:65; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:150.—Cordero, 1977a:143, figs. 131, 132; 1978a:40.—Trono, 1978:18.—Vannajan and Trono, 1978:21, fig. 21 [miscited as 20].—Cordero, 1979b:276, 290; 1980b:52, pl. 34.—Reyes, 1980:136, pl. 10: figs. 2a,b.—Trono and Fortes, 1980:70.—Trono and Ganzon-Fortes, 1980:77, fig. [s.n.].—Chan, 1981:387.—Cordero, 1981d:65, fig. 6.—Ganzon-Fortes, 1981:22.—Laserna et al., 1981:445.—Meñez and Calumpung, 1981:381.—Trono and De Lara, 1981:17.—Cordero, 1982a: fig. 10.—Saraya and Trono, 1982:39.—Trono and Ang, 1982:18.—Trono and Fortes, 1982:150.—Hurtado-Ponce, 1983:142; 1984:180.—Tungpalan, 1984:141.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Bataan, Cavite, Batangas, Quezon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. SAMAR: Eastern Samar. PANAY: Aklan. NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SQUIJOR. MINDANAO: Surigao del Sur, Davao. PALAWAN (incl. Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi (Sangasiapu I.).

***Hypnea charoides* Sonder**

Hypnea charoides Sonder, 1848 [1846–1848]:189 [type locality: Western Australia, Australia].—Meñez, 1961:74, pl. 8: fig. 91.—Galutira and Velasquez, 1964:505, pl. 4: fig. 12; pl. 8: fig. 31.—Villones and Magdano, 1968:29, fig. 30.—Velasquez, 1971:449, fig. 33.—Reyes, 1972:156.—Velasquez, 1972:63.—Westernhagen, 1973a:65; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:150.—Cordero, 1976c:10; 1977a:144, fig. 133; 1978a:58.—Puig and Cordero, 1979:40.—Velasquez, 1979b:231.—Cordero, 1980b:53, fig. 12, pl. 35.—Liao and Sotto, 1980:99.—Guzman, 1981:42, 45, 49.—Cordero, 1982a:60.—Hurtado-Ponce, 1983:142.—Cordero, 1984a:99; 1984b:66.—Hurtado-Ponce, 1984:180.—Marcos-Agngarayngay, 1984a:45, fig. 37; 1984b:128.—Tungpalan, 1984:141.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Cavite, Batangas, Quezon. CANTANDUANES. MINDORO: Oriental Mindoro. SAMAR: Eastern Samar. LEYTE (Biliran I.). NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SQUIJOR. PALAWAN.

NOTE.—*Hypnea charoides* is traditionally accredited to Lamouroux (1813:132, pl. 10: figs. 1–3), but that author did not provide a validating description. C. Agardh (1828:141), after having examined a specimen sent to him by Lamouroux, assigned the name to *Ceramium filamentosum* (= *Spyridia filamentosa*). Nonetheless, Sonder (1848 [1846–1848]) apparently believed that Lamouroux's illustration was representative of another alga since he applied the name to a plant collected by Preiss in Western Australia. Sonder provided a diagnosis so that the name must be ascribed to him and dated from 1848.

***Hypnea cornuta* (Kützinger) J. Agardh**

Chondroclonium cornutum Kützinger, 1849:741 [type locality: "Locus natalis ignotus" ("ad oras Guineae" fide J. Agardh, 1852 [1851–1863]:449)].—

Martens, 1868:90–91.—Velasquez, Trono, and Doty, 1975:135. *Hypnea cornuta* (Kützinger) J. Agardh, 1851 [1851–1863]:449.—Reyes, 1972:156.—Trono, 1973d:17; 1974e:18.—Velasquez, Trono, and Doty, 1975:150.—Meñez and Calumpung, 1981:381.—Trono and Ang, 1982:18.

PHILIPPINE DISTRIBUTION.—LUZON: Manila. NEGROS: Negros Oriental. SQUIJOR. PALAWAN (Bugsuk I.).

****Hypnea cornuta* (Kützinger) J. Agardh
var. *stellulifera* J. Agardh**

Hypnea cornuta (Kützinger) J. Agardh var. *stellulifera* J. Agardh, 1852 [1851–1863]:449 [syntype localities: "ad oras Cochinchinae" (Vietnam); Manila].

PHILIPPINE DISTRIBUTION.—LUZON: Manila.

***Hypnea divaricata* (C. Agardh) Greville**

Fucus divaricatus Brown ex Turner, 1811:110, pl. 181 [type locality: "coast of New Holland" (Australia)].
Sphaerococcus divaricatus C. Agardh, 1817:xvii.
Hypnea divaricata (C. Agardh) Greville, 1830:lix.—Martens, 1868:30, 92–93.—Dickie, 1874a:194.—Piccone, 1886:77, 90.—Zaneveld, 1956:42; 1959:121.—Velasquez, Trono, and Doty, 1975:150.—Cordero, 1977a:146, fig. 134.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite, Quezon. MINDANAO: Zamboanga. SULU.

NOTE.—*Fucus divaricatus* Brown ex Turner, the intended basionym of *Hypnea divaricata*, is a later homonym of *F. divaricatus* Linnaeus (1753:1159) and hence not priorable. *Sphaerococcus divaricatus* C. Agardh is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Hypnea musciformis* (Wulfen) Lamouroux**

Fucus musciformis Wulfen in Jacquin, 1789:154, pl. 14: fig. 3 [type locality: Trieste, Italy].
Hypnea musciformis (Wulfen) Lamouroux, 1813:131.—Howe, 1932:170.—Velasquez, 1953a:100; 1953b:206.—Zaneveld, 1956:42; 1959:121.—De Leon, Eufemio, and Pineda, 1963:82 (table I).—Velasquez, 1971:449.—Westernhagen, 1973a:65; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:150.—Cordero, 1977a:148, fig. 136, pl. XXII:A.—Trono and Fortes, 1980:70.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:150.—Cordero, 1984a:100.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Rizal, Manila. NEGROS: Negros Occidental. CEBU (Mactan I.).

***Hypnea musciformis* (Wulfen) Lamouroux
var. *esperi* J. Agardh**

Hypnea musciformis (Wulfen) Lamouroux var. *esperi* J. Agardh, 1851 [1851–1863]:442 [syntype localities: Brazil; Chile; Australia; Mauritius].—Reyes, 1972:156.—Trono, 1972a:105.—Cordero, 1977a:146, fig. 135.—Meñez and Calumpung, 1981:381.—Trono and Ang, 1982:19.
Hypnea esperi [misapplied name; see Note].—Reyes, 1972:156.—Trono,

1973d:17.—Trono and Biña, 1973:8.—Velasquez, Trono, and Doty, 1975:150.—Cordero, 1980b:53.—Reyes, 1980:136, pl. 10: figs. 3a,b.—Trono and Fortes, 1980:70.—Trono and Ganzon-Fortes, 1980:79, fig. [s.n.].—Chan, 1981:387.—Saraya and Trono, 1982:38.—Trono and Fortes, 1982:150.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas, Quezon. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental. SIKUIJOR. PALAWAN (Bugsuk I.). SULU: Tawitawi.

NOTE.—*Hypnea esperi* Bory de Saint-Vincent (1828 [1826–1829]:157) was superfluous when published, being a substitute name for *Fucus nothkanus* Esper (1802:30, pl. CXXV). If the entity currently passing under this name is recognized at the level of species, it must receive a different name. It was first given a valid name, at varietal level, by J. Agardh, who made it clear that he was describing the material in Bory de Saint-Vincent's hands and excluding *Fucus nothkanus*.

***Hypnea musciformis* (Wulfen) Lamouroux
var. *hippuroides* (Kützinger) Weber-van Bosse**

Hypnea hippuroides Kützinger, 1868:7, pl. 21: figs. a, b [type locality: Celebes, Indonesia].

Hypnea musciformis (Wulfen) Lamouroux var. *hippuroides* (Kützinger) Weber-van Bosse, 1928:445.—Cantoria, Valenzuela, and Velasquez, 1951:187, fig. 1.—Cantoria, Velasquez, and Valenzuela, 1951:296, 298.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal.

***Hypnea nidulans* Setchell**

Hypnea nidulans Setchell, 1924:161, fig. 30 [type locality: Tutuila I., American Samoa].—Weber-van Bosse, 1928:454.—Meñez, 1961:74, pl. 7: figs. 85, 86.—Domantay, 1962:291.—Westernhagen, 1973a:65; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:150.—Cordero, 1977a:148, figs. 138, 139.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas. MINDORO: Oriental Mindoro. CENTRAL VISAYAS. CEBU (Mactan I.). SULU: Sulu (Jolo I.).

***Hypnea pannosa* J. Agardh**

Hypnea pannosa J. Agardh, 1847:14 [type locality: "St. Augustin" (Oaxaca, Mexico)].—Trono, 1972a:105; 1973d:17, pl. 7: fig. 25; 1974e:18.—Trono and Biña, 1973:8.—Trono, 1978:19.—Liao and Sotto, 1980:99.—Trono and Fortes, 1980:71.—Trono and Ganzon-Fortes, 1980:81, fig. [s.n.].—Ganzon-Fortes, 1981:22.—Meñez and Calumpung, 1981:381.—Saraya and Trono, 1982:39.—Trono and Fortes, 1982:151.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas. MINDORO: Oriental Mindoro. MARINDUQUE. CEBU (Mactan I.). SULU: Tawitawi.

***Hypnea saidana* Holmes**

Hypnea saidana Holmes, 1896:256, pl. 11: figs. 3a,b [type locality: Enoshima, Kanagawa Prefecture, Japan].—Cordero, 1977a:149, fig. 140; 1979b:291; 1984c:55.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite (Corregidor I.). MINDORO: Oriental Mindoro. MASBATE. PANAY: Aklan.

***Hypnea spinella* (C. Agardh) Kützinger**

Sphaerococcus spinellus C. Agardh, 1822a:323 [type locality: West Indies].

Hypnea spinella (C. Agardh) Kützinger, 1847a:23.—Dickie, 1876a:244.—Westernhagen, 1973a:65; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:150.—Trono and Fortes, 1980:70.—Trono and Fortes, 1982:150.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.). MINDANAO: Zamboanga.

***Hypnea valentiae* (Turner) Montagne**

Fucus valentiae Turner, 1809:17, pl. 78 [type locality: Red Sea].

Hypnea valentiae (Turner) Montagne, 1841 [1839–1842]:161; 1844a:662.—Martens, 1868:92–93.—Dickie, 1874a:194.—Domantay, 1962:291.—Trono, 1972a:105; 1974e:18.—Velasquez, Trono, and Doty, 1975:150.—Vannajan and Trono, 1978:21, fig. 20 [misidentified 21].—Trono and Fortes, 1980:71.—Trono and Ganzon-Fortes, 1980:83, fig. [s.n.].—Chan, 1981:387, 389.—Ganzon-Fortes, 1981:22.—Meñez and Calumpung, 1981:381.—Trono and De Lara, 1981:17, pl. XI: fig. 4.—Saraya and Trono, 1982:39.—Trono and Ang, 1982:18.—Trono and Fortes, 1982:151.—Meñez, Phillips, and Calumpung, 1983:18, 23.—Meñez and Calumpung, 1984:105.

Hypnea hamulosa [misapplied name fide Papenfuss, 1958:105–106].—Cordero, 1976c:9, 10; 1977a:146, fig. 137; 1978a:40.—Meñez and Calumpung, 1981:381.—Trono and Ang, 1982:19.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Batangas, Cavite. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SIKUIJOR. MINDANAO: Zamboanga. PALAWAN (incl. Bugsuk I.). SULU: Tawitawi.

NOTE.—The name *Hypnea hamulosa* is traditionally attributed to (Turner) Montagne and applied in accordance with a concept derived from Turner's treatment of *Fucus hamulosus* (1809: pl. 79). As pointed out by Papenfuss (l.c.), however, Turner did not describe his plant as new, but identified it with *Fucus hamulosus* Esper (1800:169 [129 misprint], pl. LXXXIX), based on a collection from the Malabar coast of India. Esper's plant was referred by J. Agardh (1852 [1851–1863]:444), with a query, to *Hypnea nigrescens* Greville ex J. Agardh (1852 [1851–1863]:443) while Turner's plant is generally considered to be referable to *H. valentiae* (see Kützinger, 1849:758; Hauck, 1887 [1886–1887]:20; Børgesen, 1943:59).

Family PHYLLOPHORACEAE

***Ahnfeltia* E.M. Fries**

***Ahnfeltia concinna* J. Agardh**

Ahnfeltia concinna J. Agardh, 1851 [1851–1863]:312 [syntype localities: Hawaiian Is.; Chinchá Is., Peru].—Cordero, 1977a:164.

PHILIPPINE DISTRIBUTION.—BATANES. SIKUIJOR. PALAWAN.

***Ahnfeltia furcellata* Okamura**

Ahnfeltia furcellata Okamura, 1933 [1933–1942]:16, pl. 310: figs. 6–10 [syntype localities: various, all in Japan].—Cordero, 1977a:165; 1978a:42.

PHILIPPINE DISTRIBUTION.—BATANES.

Gymnogongrus Martius***Gymnogongrus dilatatus* (Turner) J. Agardh**

Fucus dilatatus Turner, 1819 [1815–1819]:57, pl. 219 [type locality: Cape of Good Hope, South Africa].

Gymnogongrus dilatatus (Turner) J. Agardh, 1851 [1851–1863]:326.—Dickie, 1876a:246.—Velasquez, Trono, and Doty, 1975:147.

PHILIPPINE DISTRIBUTION.—PANAY: Iloilo (Gigantes Is.).

***Gymnogongrus divaricatus* Holmes**

Gymnogongrus divaricatus Holmes, 1896:255, pl. 8: figs. 3a,b [type locality: Shimoda, Shizuoka Prefecture, Japan].—Cordero, 1977a:165; 1978a:41.

PHILIPPINE DISTRIBUTION.—BATANES.

***Gymnogongrus flabelliformis* Harvey**

Gymnogongrus flabelliformis Harvey, 1857:332 [type locality: Shimoda, Shizuoka Prefecture, Japan].—Cordero, 1977a:166, fig. 170.—Hurtado-Ponce, 1983:143; 1984:180.—Marcos-Angarayngay, 1984a:51, fig. 43.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte.

***Gymnogongrus pygmaeus* J. Agardh**

Gymnogongrus pygmaeus J. Agardh, 1851 [1851–1863]:317 [type locality: "ad oras Hindostaniae" (India)].—Martens, 1868:31, 96–97.—Velasquez, Trono, and Doty, 1975:147.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

Phyllophora Greville***Phyllophora submaritima* Dawson**

Phyllophora submaritima Dawson, 1949b:6, figs. 17, 18 ["submaritimus"] [type locality: Cortes Bank, southern California, USA].—Cordero, 1977a:168, fig. 173.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental.

Family GIGARTINACEAE***Gigartina tenella* Harvey**

Gigartina tenella Harvey, 1860a:332 [type locality: Kikai-jima, Amami-gunto, Ryukyu-retto, Japan].—Cordero, 1977a:169.—Tahil, 1978:52.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. CEBU (Mactan I.).

Order RHODYMENIALES**Family RHODYMENIACEAE*****Botryocladia* (J. Agardh) Kylin*****Botryocladia botryoides* (Wulfen) J. Feldmann**

Fucus botryoides Wulfen in Jacquin, 1789:146, pl. 13: fig. 1 [type locality: Adriatic Sea].

Botryocladia botryoides (Wulfen) J. Feldmann, 1941:90.

Chrysomenia uvaria J. Agardh, 1842:106.—Dickie, 1876a:245.—Velasquez, Trono, and Doty, 1975:135.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

NOTE.—The nomenclature of this species is discussed by Silva (1980:124). *Chondria uvaria* C. Agardh (1822a:347), the intended basionym of *Chrysomenia uvaria*, is a superfluous name for *Fucus botryoides* and hence not priorable. *Chrysomenia uvaria* J. Agardh, while treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN, is equally superfluous.

***Botryocladia pyriformis* (Børgesen) Kylin**

Chrysomenia pyriformis Børgesen, 1910:187, figs. 8, 9 [type locality: St. Jan (St. John), Virgin Is.].

Botryocladia pyriformis (Børgesen) Kylin, 1931:18.—Reyes, 1980:137, pl. 11: fig. 2.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

***Botryocladia skottsbergii* (Børgesen) Levring**

Chrysomenia skottsbergii Børgesen, 1924:307, figs. 49, 50 [type locality: Easter I.].

Botryocladia skottsbergii (Børgesen) Levring, 1941:645, footnote.

Chrysomenia kuckuckii Weber-van Bosse, 1928:466, fig. 199 [syntype localities: various, all in Indonesia].

Botryocladia kuckuckii (Weber-van Bosse) Yamada and Tanaka, 1938:77.—Meñez, 1961:78.—Velasquez, Trono, and Doty, 1975:130.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—The conspecificity of *Chrysomenia kuckuckii* and *C. skottsbergii* was proposed by G. Feldmann (1945:55–56) and Børgesen (1950:42–44).

***Botryocladia uvarioides* Dawson**

Botryocladia uvarioides Dawson, 1944:306, pl. 45: figs. 8–10; pl. 75: fig. 1 [type locality: San José del Cabo, Baja California Sur, Mexico].—Trono, 1973a:134, figs. 6, 8; 1974b:88.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon. SULU: Sulu (Siasi I.).

Coelothrix* Børgesen**Coelothrix irregularis* (Harvey) Børgesen**

Cordylecladia ? *irregularis* Harvey, 1853:156 [type locality: Key West, Florida, USA].

Coelothrix irregularis (Harvey) Børgesen, 1920:389.—Trono, 1972a:103; 1974b:89.—Saraya and Trono, 1982:43, pl. VII: figs. 1, 4.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. SULU: Sulu (Siasi I.), Tawitawi.

Erythrocolon* J. Agardh**Erythrocolon podagricum* J. Agardh**

Erythrocolon podagricum J. Agardh in Grunow, 1874:33 [syntype localities: Tongatapu and Haafeva I., Tonga; Ovalau I., Fiji].—Cordero, 1977a:169, fig. 174, pl. XXIV:A.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas, Quezon.

Faucea* Montagne and Bory**Faucea leptophylla* Segawa**

Faucea leptophylla Segawa, 1941:264, fig. 10, pl. 58: fig. 1 [type locality: Kozu-shima, Izu-shoto, Japan].—Cordero, 1977a:170, fig. 171.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

Gloiocladia* J. Agardh**Gloiocladia ramellifera* Hauck**

Gloiocladia ramellifera Hauck, 1886 [1886–1887]:219 [type locality: Meith [Maidh], Somalia].—Weber-van Bosse, 1928:457, pl. XI: fig. 1.—Velasquez, Trono, and Doty, 1975:145.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Pearl Bank).

Hymenocladia* J. Agardh**Hymenocladia dactyloides* (Sonder) J. Agardh**

Gracilaria dactyloides Sonder, 1845:55 [type locality: Western Australia, Australia].—Dickie, 1876a:245.—Velasquez, Trono, and Doty, 1975:146.—Abbott, 1985:89.

Hymenocladia dactyloides (Sonder) J. Agardh, 1870:454.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

Rhodymenia* Greville**Rhodymenia californica* Kylin**

Rhodymenia californica Kylin, 1931:21, pl. 9: fig. 22 [type locality: Pacific Grove, California, USA].—Cordero, 1977a:170, fig. 175.

PHILIPPINE DISTRIBUTION.—PALAWAN.

***Rhodymenia coacta* Okamura and Segawa**

Rhodymenia coacta Okamura and Segawa in Segawa, 1935:84, pl. 20: fig. 1 [type locality: Shikine-jima, Izu-shoto, Japan].—Cordero, 1977a:172, fig. 176.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. CENTRAL VISAYAS.

***Rhodymenia decumbens* W.R. Taylor**

Rhodymenia decumbens W.R. Taylor, 1945:251, pl. 84: fig. 1 [type locality: Isla Baltra, Galápagos].—Cordero, 1977a:172 [*R. procumbens*, in error].

PHILIPPINE DISTRIBUTION.—BATANES.

***Rhodymenia intricata* (Okamura) Okamura**

Phyllophora intricata Okamura, 1921:129, pl. CLXXXII: figs. 1–8 [syntype localities: various, all in Japan].—Cordero, 1977a:168, fig. 172, pl. XXV:B.

Rhodymenia intricata (Okamura) Okamura, 1930 [1929–1932]:31 ["23"], pl. CCLXVII.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

Family LOMENTARIACEAE***Lomentaria* Lyngbye*****Lomentaria articulata* (Hudson) Lyngbye**

Ulva articulata Hudson, 1762:476 [type locality: Cornwall, England].

Lomentaria articulata (Hudson) Lyngbye, 1819:101.—Cordero, 1976c:10; 1977a:177; 1978a:44.

PHILIPPINE DISTRIBUTION.—BATANES.

***Lomentaria baileyana* (Harvey) Farlow**

Chylocladia baileyana Harvey, 1853:185, pl. XX:c: fig. 1 [syntype localities: various, in Massachusetts, Rhode Island, and New York, USA].

Lomentaria baileyana (Harvey) Farlow, 1876:698.—Cordero, 1976c:6.

PHILIPPINE DISTRIBUTION.—BATANES.

***Lomentaria hakodatensis* Yendo**

Lomentaria hakodatensis Yendo, 1920:6 [syntype localities: various, all in Japan].—Cordero, 1976c:9; 1977a:177; 1978a:44.

PHILIPPINE DISTRIBUTION.—BATANES.

***Lomentaria pinnata* Segawa**

Lomentaria pinnata Segawa, 1938:148, fig. 7 [type locality: Miyake-jima, Izu-shoto, Japan].—Cordero, 1977a:177; 1984a:103.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

Family CHAMPIACEAE

Champia Desvaux*Champia bifida* Okamura

Champia bifida Okamura, 1901 [1900–1902]:67, pl. XXIV [syntype localities: Enoshima and Misaki, Kanagawa Prefecture, Japan].—Cordero, 1977a:173, fig. 178.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Champia caespitosa Dawson

Champia caespitosa Dawson, 1944:311, pl. 46: figs. 3, 4 [type locality: Isla Pond (Estanque), Baja California Norte, Mexico].—Cornejo and Velasquez, 1972:178, pl. 4: figs. 34, 34a.—Velasquez, Trono, and Doty, 1975:134.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

Champia compressa Harvey

Champia compressa Harvey, 1838:402 [type locality: Muizenberg, Cape Province, South Africa].—Dickie, 1876a:244.—Velasquez, Trono, and Doty, 1975:134.

Champia vieillardii Kützing, 1866:14, pl. 37: figs. *e*, *f* [type locality: not specified (New Caledonia fide Grunow, 1874:34)].—Saraya and Trono, 1982:42.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDANAO: Zamboanga.

NOTE.—The synonymy was proposed by Grunow (1874:34).

Champia disticha Dawson

Champia disticha Dawson, 1944:310, pl. 46: fig. 5 [type locality: Isla San Esteban, Sonora, Mexico].—Cordero, 1977a:174.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

Champia japonica Okamura

Champia japonica Okamura, 1931 [1929–1932]:49, pl. CCLXXVI: figs. 1–6 [syntype localities: various, all in Japan].—Cordero, 1977a:174; 1978a:45.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Batangas.

Champia parvula (C. Agardh) Harvey

Chondria parvula C. Agardh, 1824:207 [type locality: Cádiz, Spain].
Champia parvula (C. Agardh) Harvey, 1853:76.—Reyes, 1972:157.—Trono and Biña, 1973:10.—Ortega, Alcalá, and Reyes, 1974:187, 188.—Trono, 1974b:89.—Velasquez, Trono, and Doty, 1975:134.—Cordero, 1976c:10; 1977a:175, fig. 179.—Taylor, 1977b:13.—Cordero, 1978a:45.—Liao and Sotto, 1980:99.—Chan, 1981:387.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:381.—Saraya and Trono, 1982:42, pl. VI: figs. 1, 2.—Meñez, Phillips, and Calumpung, 1983:23.—Meñez and Calumpung, 1984:105.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Quezon. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental. CEBU (Mactan I.). SIQUIJOR. MINDANAO: Zamboanga. SULU: Sulu (Siasi I.). PALAWAN.

Champia salicornoides Harvey

Champia salicornoides Harvey, 1853:76, pl. XIX:B [type locality: Key West, Florida, USA].—Weber-van Bosse, 1928:477.—Velasquez, Trono, and Doty, 1975:130.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS. SULU: Sulu (North Ubian I.), Tawitawi (Pearl Bank).

**Champia spathulata* Weber-van Bosse

Champia spathulata Weber-van Bosse, 1928:477, pl. XVI: fig. 6 [type locality: North Ubian I., Sulu Prov., Sulu Archipelago].—Velasquez, Trono, and Doty, 1975:134.

PHILIPPINE DISTRIBUTION.—As above.

Order CERAMIALES

Family CERAMIACEAE

Anotrichium Nägeli*Anotrichium tenue* (C. Agardh) Nägeli

Griffithsia tenuis C. Agardh, 1828:131 [*"Griffithsia"*] [type locality: Venezia, Italy].—Fortes and Trono, 1980:60.—Chan, 1981:387, 389.—Fortes, 1981b:396.—Saraya and Trono, 1982:47.

Anotrichium tenue (C. Agardh) Nägeli, 1862:399.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas.

Antithamnion Nägeli*Antithamnion antillanum* Børgesen

Antithamnion antillanum Børgesen, 1917:226, figs. 213–216 [type locality: St. Thomas, Virgin Is.].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Antithamnion lherminieri Nasr

Antithamnion lherminieri Nasr, 1941:66, figs. 9, 10 [type locality: Abu Sadaf Reef, Red Sea, Egypt].—Cordero, 1977a:178, figs. 181, 182.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS. PALAWAN.

NOTE.—Nasr appears to be the first author to have supplied a validating description for this species, which traditionally is accredited to (P. Crouan and H. Crouan)

Bornet. Its morphology, taxonomy, and nomenclature are treated by Abbott (1979:215).

***Balliella* Itono and Tanaka**

***Balliella subcorticata* (Itono) Itono and Tanaka**

Anthamion subcorticatum Itono, 1969:40, fig. 7 [type locality: Yoron-jima, Okinawa-gun, Ruykyu-retto, Japan].—Cordero, 1983:189, fig. 1.

Balliella subcorticata (Itono) Itono and Tanaka, 1973:250.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

***Centroceras* Kützing**

***Centroceras apiculatum* Yamada**

Centroceras apiculatum Yamada, 1944:42 [type locality: Ant Atoll, near Ponape, Caroline Is.].—Saraya and Trono, 1982:44.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Centroceras clavulatum* (C. Agardh) Montagne**

Ceramium clavulatum C. Agardh, 1822b:2 [type locality: Callao, Peru].

Centroceras clavulatum (C. Agardh) Montagne, 1846b:140.—Reyes, 1972:158.—Ortega, Alcalá, and Reyes, 1974:186, 187.—Velasquez, Trono, and Doty, 1975:133.—Cordero, 1976c:9; 1977a:179, figs. 183, 184; 1978a:47.—Vannajan and Trono, 1978:23, fig. 29.—Reyes, 1980:138, pl. 11: figs. 5a,b.—Chan, 1981:387.—Meñez and Calumpog, 1981:381.—Trono and De Lara, 1981:19, pl. XII: fig. 4.—Cordero, 1984a:104.

Centroceras cryptacanthum Kützing, 1841:741 [type locality: Antilles].

Centroceras clavulatum (C. Agardh) Montagne var. *cryptacanthum* (Kützing) Grunow, 1867:65.—Piccone, 1886:54, 90.

Centroceras hyalacanthum Kützing, 1841:742 [type locality: "Wahrscheinlich aus Westindien"].—Martens, 1868:28, 84–85.—Velasquez, Trono, and Doty, 1975:133.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Manila, Cavite. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. NEGROS: Negros Oriental. SQUIJOR. MINDANAO: Zamboanga. PALAWAN.

NOTE.—The synonymy was proposed by J. Agardh (1851 [1851–1863]:148–149).

***Centroceras minutum* Yamada**

Centroceras minutum Yamada, 1944:42 [type locality: Ant Atoll, near Ponape, Caroline Is.].—Trono, 1973d:20.—Cordero, 1977a:180, fig. 185.—Fortes, 1981b:396.—Saraya and Trono, 1982:43, pl. VII: fig. 3.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. SQUIJOR. MINDANAO: Zamboanga.

***Ceramiella* Børgesen**

Hommersand (1963:238) retained *Ceramiella* within the circumscription of *Ceramium*, but Díaz-Piferrer (1969a:202) argued in support of its distinctness.

***Ceramiella procumbens* (Setchell and Gardner) Díaz-Piferrer**

Ceramium procumbens Setchell and Gardner, 1924a:772, pl. 27: figs. 51–54 [type locality: Isla Partida, Baja California Norte, Mexico].—Fortes, 1981b:396.

Ceramiella procumbens (Setchell and Gardner) Díaz-Piferrer, 1969c:203.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Ceramium* Roth**

***Ceramium affine* Setchell and Gardner**

Ceramium affine Setchell and Gardner, 1930:172 [type locality: Isla Guadalupe, Pacific Mexico].—Fortes and Trono, 1980:59 [var. *affine*].—Fortes, 1981b:396.—Saraya and Trono, 1982:44, pl. VIII: fig. 2 [var. *affine*].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas.

***Ceramium cruciatum* Collins and Hervey**

Ceramium cruciatum Collins and Hervey, 1917:144, pl. IV: figs. 27, 28 [type locality: Bermuda].—Westernhagen, 1973a:64; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Ceramium equisetoides* Dawson**

Ceramium equisetoides Dawson, 1944:320, pl. 51: fig. 1 [type locality: Puerto San Carlos, near Guaymas, Sonora, Mexico].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Ceramium fastigiatum* (Wulfen ex Roth) Harvey**

Conserva fastigiata Wulfen ex Roth, 1800b:224 [type locality: Adriatic Sea].

Ceramium fastigiatum (Wulfen ex Roth) Harvey, 1834b:303.—Vannajan and Trono, 1978:24, fig. 31.—Chan, 1981:387.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Manila, Cavite.

NOTE.—*Ceramium fastigiatum* (Roth) Harvey is a later homonym of *C. fastigiatum* (Linnaeus) Wiggers (1780:91), *C. fastigiatum* Roth (1800a:463), and *C. fastigiatum* Roussel (1806:87). Its correct name probably will be found among taxonomic synonyms.

***Ceramium flaccidum* (Harvey ex Kützing) Ardisson**

Hormoceras flaccidum Harvey ex Kützing, 1862:21, pl. 69: figs. a–d [type locality: Kilkee, County Clare, Eire].

Ceramium flaccidum (Harvey ex Kützing) Ardisson, 1871:40.

Ceramium byssoideum Harvey, 1853:218 [type locality: Key West, Florida, USA].

Ceramium gracillimum (Kützing) Zanardini var. *byssoideum* (Harvey) Mazoyer, 1938:323.—Cordero, 1976c:9; 1977a:180, fig. 186; 1978a:47.—

Vannajan and Trono, 1978:24.—Fortes and Trono, 1980:61.—Meñez and Calumpung, 1981:381.—Saraya and Trono, 1982:45, pl. VIII: fig. 1 [*"byssoides"* p. 45].
Ceramium fimbriatum Setchell and Gardner, 1924a:777, pl. 26: figs. 43, 44 [type locality: near La Paz, Baja California Sur, Mexico].—Meñez and Calumpung, 1981:381.—Saraya and Trono, 1982:44.
Ceramium masonii Dawson, 1950c:126, figs. 11, 12 [type locality: Cabeza Ballena, Baja California Sur, Mexico].—Liao and Sotto, 1980:99.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Cavite. CEBU (Mactan I.).

NOTE.—The synonymy was proposed by Womersley (1978:234). *Ceramium byssoides* Harvey is treated as a homonym of *C. byssoides* Ducluzeau (1805:66) in accordance with Article 64.2, Ex. 8, of the ICBN.

Ceramium gracillimum (Kützinger) Zanardini

Hormoceras gracillimum Kützinger, 1841:733 [type locality: Trieste, Italy].
Ceramium gracillimum (Kützinger) Zanardini, 1847:223.—Chan, 1981:387, 389.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—Fortes cited the binomial without an author, and it is uncertain whether it should be referred to *Hormoceras gracillimum*. The combination is traditionally (but incorrectly) accredited to (Kützinger) Griffiths and Harvey in Harvey (1848 [1847–1851]: pl. CCVI). According to Womersley (1978:234), Harvey had *Ceramium flaccidum* in hand. A further consideration is that *Ceramium gracillimum* (Kützinger) Zanardini is a later homonym of *C. gracillimum* C. Agardh (1824:140), a name that has disappeared from the literature.

Ceramium loureiri C. Agardh

Ceramium loureiri C. Agardh, 1824:137 [type locality: "Ad rupes marinas Cochinchinae" (Vietnam)].—Martens, 1868:82–83.—Velasquez, Trono, and Doty, 1975:133.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Ceramium luetzelburgii O.C. Schmidt

Ceramium luetzelburgii O.C. Schmidt, 1924:98, fig. 6 [type locality: Cabo Branco, Paraiba, Brazil].—Fortes and Trono, 1980:59.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Ceramium marshallense Dawson

Ceramium marshallense Dawson, 1957:120, figs. 27a,b [type locality: Rigili I., Eniwetok Atoll, Marshall Is.].—Fortes and Trono, 1980:60.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Ceramium maryae Weber-van Bosse

Ceramium maryae Weber-van Bosse, 1923:324, figs. 117, 118 [type locality: Kawasa I., Paternoster Is. (Kepulauan Tengah), Indonesia].—Domanay, 1962:288.—Velasquez, Trono, and Doty, 1975:133.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Ceramium mazatlanense Dawson

Ceramium mazatlanense Dawson, 1950c:130, pl. 2: figs. 14, 15 [type locality: Mazatlan, Sinaloa, Mexico].—Cornejo and Velasquez, 1972:182, pl. 5: fig. 40.—Velasquez, Trono, and Doty, 1975:133.—Chan, 1981:387, 389.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:381.—Saraya and Trono, 1982:45.—Meñez, Phillips, and Calumpung, 1983:23.—Meñez and Calumpung, 1984:105.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas. CENTRAL VISAYAS. PALAWAN.

Ceramium multijugum Jaasund

Ceramium multijugum Jaasund, 1970:68, figs. 1c–e,h, 2 [intended type locality: Tanzania].—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

NOTE.—*Ceramium multijugum* is an invalid name because Jaasund failed to indicate a type, as required by Article 37 of the ICBN.

Ceramium nitens (C. Agardh) J. Agardh

Ceramium rubrum (Hudson) C. Agardh var. *nitens* C. Agardh, 1824:136 [type locality: Antilles].
Ceramium nitens (C. Agardh) J. Agardh, 1851 [1851–1863]:130.—Westernhagen, 1973a:64; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Ceramium personatum Setchell and Gardner

Ceramium personatum Setchell and Gardner, 1930:171, pl. 6: figs. 21, 22 [type locality: Isla Guadalupe, Pacific Mexico].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Ceramium serpens Setchell and Gardner

Ceramium serpens Setchell and Gardner, 1924a:775, pl. 27: fig. 58 [type locality: La Paz, Baja California Sur, Mexico].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Ceramium sinicola Setchell and Gardner

Ceramium sinicola Setchell and Gardner, 1924a:773, pl. 25: figs. 40, 41; pl. 75 [type locality: Ensenada, Baja California Norte, Mexico].—Fortes and Trono, 1980:60 [var. *sinicola*].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—PANAY: Iloilo.

***Ceramium taylorii* Dawson**

Ceramium taylorii Dawson, 1950c:127, figs. 13, 31–33 [type locality: Cabeza Ballena, Baja California Sur, Mexico].—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Ceramium tenerrimum* (Martens) Okamura**

Hormoceras tenerrimum Martens, 1868:146, pl. VIII: fig. 2 [type locality: Nagasaki, Japan].

Ceramium tenerrimum (Martens) Okamura, 1921:112.—Cordero, 1977a: 181, fig. 187.

PHILIPPINE DISTRIBUTION.—LUZON: Manila Bay.

***Ceramium tenuissimum* (Roth) J.E. Areschoug**

Ceramium diaphanum (Lightfoot) Roth var. *tenuissimum* Roth, 1806:156 [type locality: not specified].

Ceramium tenuissimum (Roth) J.E. Areschoug, 1847:322.—Cornejo and Velasquez, 1972:182, pl. 3: fig. 25.—Velasquez, Trono, and Doty, 1975:133.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

NOTE.—This species is usually attributed either to (Lyngbye) J. Agardh (1851 [1851–1863]:120) or to (Roth) J. Agardh (1851 [1851–1863]:120). In the first instance, the basionym is cited as *Ceramium diaphanum* var. *tenuissimum* Lyngbye (1819:120, pl. 37:B.4), but Lyngbye accredited the variety to Roth. Areschoug was the first to elevate it to specific rank. Regardless, the name is untenable because it is a later homonym of *C. tenuissimum* Bonnemaison (1828:132) from Atlantic France, which is referable to *Aglaothamnion*. The correct name probably will be found among taxonomic synonyms.

***Ceramium vagans* P.C. Silva, new name**

Ceramium vagabundum Dawson, 1957:121, fig. 27e [*"vagabunde"*] [type locality: Parry I., Eniwetok Atoll, Marshall Is.] [replaced name].—Vannajan and Trono, 1978:24, fig. 32.—Chan, 1981:387.—Saraya and Trono, 1982:45, pl. VII: fig. 2 [*"vagabunde"* p. 45].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite.

NOTE.—*Ceramium vagans* is proposed as a substitute name for *C. vagabundum* Dawson, a later homonym of *C. vagabundum* (Linnaeus) Roth (1800a:465).

***Ceramium zacae* Setchell and Gardner**

Ceramium zacae Setchell and Gardner, 1937:89, pl. 8: figs. 22a–22c [type locality: Bahía San Bartolomé (Bahía Tortugas), Baja California Sur, Mexico].—Fortes and Trono, 1980:60, fig. 11.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Crouania* J. Agardh**Crouania attenuata* (C. Agardh) J. Agardh**

Mesogloia attenuata C. Agardh, 1824:51 [type locality: "In mari Atlantico"].

Crouania attenuata (C. Agardh) J. Agardh, 1842:83.—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Crouania minutissima* Yamada**

Crouania minutissima Yamada, 1944:40 [type locality: Ant Atoll, near Ponape, Caroline Is.].—Vannajan and Trono, 1978:25, fig. 33.—Fortes and Trono, 1980:65.—Fortes, 1981b:396.—Saraya and Trono, 1982:46.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite. PALAWAN.

Dasyphila* Sonder**Dasyphila plumarioides* Yendo**

Dasyphila plumarioides Yendo, 1920:7 [type locality: Kotosho (Hung-t'ou), Taiwan].—Berdach, 1980:101, fig. 2.

PHILIPPINE DISTRIBUTION.—PANAY: Aklan.

Gordoniella* Itono**Gordoniella yonakuniensis* (Yamada and Tanaka) Itono**

Spermothamnion yonakuniense Yamada and Tanaka, 1938:79, figs. 12, 13 [*"yonakuniensis"*] [type locality: Yonakuni-jima, Sakishima-gunto, Ryukyu-retto, Japan].—Cordero, 1976c:9; 1977a:183, figs. 189, 190; 1978a:46.

Gordoniella yonakuniensis (Yamada and Tanaka) Itono, 1977:54.

PHILIPPINE DISTRIBUTION.—BATANES.

Griffithsia* C. Agardh**Griffithsia ovalis* Harvey**

Griffithsia ovalis Harvey, 1855:559 [type locality: King George Sound, Western Australia, Australia].—Cornejo and Velasquez, 1972:179, pl. 2: figs. 18, 18a.—Velasquez, Trono, and Doty, 1975:147.—Chan, 1981:387.—Fortes, 1981b:396.—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas. CENTRAL VISAYAS.

***Griffithsia rhizophora* Grunow ex Weber-van Bosse**

Griffithsia rhizophora Grunow ex Weber-van Bosse, 1923:313 [syntype localities: various, in Indonesia and Sri Lanka].—Saraya and Trono, 1982:46, pl. VIII: fig. 4.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Gymnothamnion J. Agardh***Gymnothamnion elegans* (Schousboe ex C. Agardh)
J. Agardh**

Callithamnion elegans Schousboe ex C. Agardh, 1828:162 [type locality: Tangier, Morocco].

Gymnothamnion elegans (Schousboe ex C. Agardh) J. Agardh, 1892:178 ["*rlegans*"].—Saraya and Trono, 1982:48.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Haloplegma* Montagne**Haloplegma duperreyi* Montagne**

Haloplegma duperreyi Montagne, 1842d:258, pl. 7: fig. 1 [type locality: Martinique].—Berdach, 1980:101, fig. 1 ["*Haploplegma*"].—Meñez and Calumpo, 1981:381.

PHILIPPINE DISTRIBUTION.—PANAY: Aklan.

Microcladia* Greville**Microcladia elegans* Okamura**

Microcladia elegans Okamura, 1907 [1907–1909]:1, pl. I: figs. 1–10 [syntype localities: various, all in Japan].—Cordero, 1976c:11; 1977a:181, pl. XII:A.; 1978a:48; 1984a:104.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan. CATANDUANES. MINDANAO: Davao.

***Microcladia glandulosa* (Solander ex Turner) Greville**

Fucus glandulosus Solander ex Turner, 1808:81, pl. 38 [syntype localities: various, in England and Atlantic Spain].

Microcladia glandulosa (Solander ex Turner) Greville, 1830:1 ["*el*"].—Domantay, 1962:293.—Velasquez, Trono, and Doty, 1975:153.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Pleonosporium* (Nägeli) Nägeli ex Hauck**Pleonosporium globuliferum* Levring**

Pleonosporium globuliferum Levring, 1941:647, fig. 19 [type locality: Más Afuera, Islas Juan Fernández, Chile].—Saraya and Trono, 1982:46.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Ptilothamnion* Thuret**Ptilothamnion cladophorae* (Yamada and Tanaka)
Feldmann-Mazoyer**

Spermothamnion cladophorae Yamada and Tanaka, 1934:342, figs. 1, 2 [syntype localities: Garan-bi (O-luan) and Kasho-to, Taiwan].

Ptilothamnion cladophorae (Yamada and Tanaka) Feldmann-Mazoyer,

1941:375, footnote.—Cordero, 1976c:9; 1977a:183, fig. 188; 1978a:46.

PHILIPPINE DISTRIBUTION.—BATANES.

Spyridia* Harvey**Spyridia filamentosa* (Wulfen) Harvey**

Fucus filamentosus Wulfen, 1803:64 [type locality: Adriatic Sea].

Spyridia filamentosa (Wulfen) Harvey, 1833:337.—Weber-van Bosse, 1923:320.—Howe, 1932:170.—Reyes, 1972:158.—Trono, 1972a:106; 1973a:140; 1973d:20, pl. 11: fig. 12.—Trono and Biña, 1973:11.—Trono, 1974b:95.—Velasquez, Trono, and Doty, 1975:164.—Cordero, 1977a:184, figs. 191, 192.—Reyes, 1980:138, pl. 11: figs. 4a,b.—Chan, 1981:387.—Fortes, 1981b:396.—Meñez and Calumpo, 1981:381.—Saraya and Trono, 1982:47.—Trono and Ang, 1982:20.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan. MINDORO: Oriental Mindoro. NEGROS: Negros Occidental, Negros Oriental. SQUIJOR. MINDANAO: Zamboanga. PALAWAN (Bugsuk I.). SULU: Sulu (Capual I., Siasi I.), Tawitawi.

***Spyridia velasquezii* Trono**

Spyridia velasquezii Trono, 1972b:53, pl. 9: figs. 1, 2; pl. 10: fig. 3 [type locality: Koror I., Palau Group (Belau), Caroline Is.].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Wrangelia* C. Agardh**Wrangelia argus* (Montagne) Montagne**

Griffithsia argus Montagne, 1841 [1839–1842]:176, pl. 8: fig. 4 [type locality: Roque del Gando, Islas Canarias].

Wrangelia argus (Montagne) Montagne, 1856:444.—Cordero, 1977a:186, figs. 195–198.—Saraya and Trono, 1982:47, pl. IX: fig. 3.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan. Pangasinan.

***Wrangelia bicuspidata* Børgesen**

Wrangelia bicuspidata Børgesen, 1916:118, figs. 127–130 [type locality: between St. Jan (St. John) and St. Thomas, Virgin Is.].—Fortes, 1981b:396.—Trono and Ang, 1982:21.

PHILIPPINE DISTRIBUTION.—PALAWAN (Bugsuk I.).

***Wrangelia penicillata* (C. Agardh) C. Agardh**

Griffithsia penicillata C. Agardh, 1824:143 ["*Griffithsia*"] [type locality: "Ad oras Italiae"].

Wrangelia penicillata (C. Agardh) C. Agardh, 1828:138.—Fortes and Trono, 1980:61, fig. 8.—Saraya and Trono, 1982:48, pl. VIII: fig. 3.—Trono and Ang, 1982:21.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CEBU (Mactan I.). PALAWAN (Bugsuk I.).

Family DELESSERIACEAE

Botryocarpa Greville

Botryocarpa prolifera Greville

Fucus botryocarpus Turner, 1819 [1815–1819]:115, pl. 246 [type locality: Cape of Good Hope, South Africa].

Botryocarpa prolifera Greville, 1830:xlix.—Dickie, 1876a:245.—Velasquez, Trono, and Doty, 1975:130.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

NOTE.—Greville, when establishing the genus *Botryocarpa* on the basis of *Fucus botryocarpus* Turner, was obliged to change the epithet in order to avoid the creation of a tautonym, which is proscribed by Article 23.4 of the ICBN.

Caloglossa (Harvey) J. Agardh

Caloglossa adnata (Zanardini) De Toni

Delesseria adnata Zanardini, 1872:141, pl. V:B [type locality: Sarawak, Malaysia].

Caloglossa adnata (Zanardini) De Toni, 1900:730.—Post, 1938:211.—Fortes and Trono, 1980:61.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal. MINDORO: Oriental Mindoro.

Caloglossa leprieurii (Montagne) J. Agardh

Delesseria leprieurii Montagne, 1840:196, pl. 5: fig. 1 [type locality: near Cayenne, French Guiana].

Caloglossa leprieurii (Montagne) J. Agardh, 1876:499.—Fortes and Trono, 1980:61, fig. 7.—Fortes, 1981b:396.—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. CENTRAL VISAYAS.

Caloglossa leprieurii (Montagne) J. Agardh var. *hookeri* Post

Caloglossa leprieurii (Montagne) J. Agardh var. *hookeri* Post, 1936:53 [type locality: Bay of Islands, New Zealand].—Post 1938:211, 212.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal.

Caloglossa ogasawaraensis Okamura

Caloglossa ogasawaraensis Okamura, 1897:12, figs. A–D [type locality: Ogasawara-gunto (Bonin Is.), Japan].—Fortes and Trono, 1980:62.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Claudea Lamouroux

**Claudea batanensis* Tanaka

Claudea batanensis Tanaka, 1967:18, figs. 6–8, pl. II:B [type locality: Batan I., Batanes Prov., Luzon].—Velasquez, Trono, and Doty, 1975:136.—Cordero, 1977a:198; 1978a:48.

PHILIPPINE DISTRIBUTION.—BATANES.

Claudea multifida Harvey

Claudea multifida Harvey, 1854:145, pl. VI [type locality: Belligam (Weligama), Sri Lanka].—Cordero, 1977a:199, fig. 215, pl. XXVI:B—Liao and Sotto, 1980:99.—Meñez and Calumpong, 1981:381.—Cordero, 1984a:106.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Batangas. MINDORO: Oriental Mindoro. PANAY: Aklan, Iloilo. GUIMARAS. CEBU (Mactan I.). SIQUIJOR.

Cottoniella Børgesen

Cottoniella filamentosa (Howe) Børgesen

Sarcomenia filamentosa Howe, 1905:571, pl. 27; pl. 29: figs. 1–11 [type locality: Biscayne Key, Florida, USA].

Cottoniella filamentosa (Howe) Børgesen, 1920:478.—Westernhagen, 1973a:65; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Hypoglossum Kützing

Hypoglossum attenuatum Gardner

Hypoglossum attenuatum Gardner, 1927b:104, pl. 20: fig. 3; pls. 35, 36 [type locality: Puerto Libertad, Sonora, Mexico].—Domantay, 1962:291.—Trono, 1973a:141, fig. 22.—Velasquez, Trono, and Doty, 1975:150.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Sorsogon.

Hypoglossum serrulatum J. Agardh

Hypoglossum serrulatum J. Agardh, 1898:186 [type locality: Port Jackson, New South Wales, Australia].—Weber-van Bosse, 1923:389.—Velasquez, Trono, and Doty, 1975:150.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

Hypoglossum spathulatum (Sonder) Kützing

Delesseria spathulata Sonder, 1845:57 [type locality: Western Australia, Australia].

Hypoglossum spathulatum (Sonder) Kützing, 1849:877.—Weber-van Bosse, 1923:389.—Velasquez, Trono, and Doty, 1975:150.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

Martensia Hering**Martensia flabelliformis Harvey ex J. Agardh**

Martensia flabelliformis Harvey ex J. Agardh, 1863 [1851–1863]:826 [type locality: Tonga].—Westernhagen, 1973a:65; 1974:112 (table I).—Cordero, 1977a:222.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.). SÍQUIJOR.

Martensia speciosa Zanardini

Martensia speciosa Zanardini, 1874:488 [type locality: Lord Howe I.].—Weber-van Bosse, 1923:385.—Velasquez, Trono, and Doty, 1975:152.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Pearl Bank).

Opephyllum Schmitz***Opephyllum martensii Schmitz**

Opephyllum martensii Schmitz in Schmitz and Hauptfleisch, 1897 [1896–1897]:410 [type locality: “an der Küste der Philippinen” (Zamboanga)].—De Toni, 1900:620; 1924:321.—Kylin, 1956:449.—Velasquez, Trono, and Doty, 1975:158.

Pollexenia pedicellata [misapplied name fide Schmitz, l.c.].—Martens, 1868:32, 100–101.—Velasquez, Trono, and Doty, 1975:160.

PHILIPPINE DISTRIBUTION.—As above.

Taenioma J. Agardh**Taenioma perpusillum (J. Agardh) J. Agardh**

Polysiphonia perpusilla J. Agardh, 1847:16 [type locality: “St. Augustin” (Oaxaca, Mexico)].

Taenioma perpusillum (J. Agardh) J. Agardh, 1863 [1851–1863]:1257.—Fortes and Trono, 1980:65.—Fortes, 1981b:396.—Saraya and Trono, 1982:48, pl. IX: figs. 1, 4.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PALAWAN (Bugsuk I.).

Vanvoorstia Harvey**Vanvoorstia spectabilis Harvey**

Vanvoorstia spectabilis Harvey, 1854:144, pl. V [type locality: Belligam (Weligama), Sri Lanka].—Weber-van Bosse, 1923:390.—Trono, 1973d:20, pl. 10: fig. 5.—Ortega, Alcalá, and Reyes, 1974:186.—Trono, 1974b:94.—Velasquez, Trono, and Doty, 1975:169.—Cordero, 1977a:230, pl. XXVIII:B.—Liao and Sotto, 1980:99.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon. NEGROS: Negros Oriental. SÍQUIJOR. CEBU (Mactan I.). SULU: Sulu (North Ubian I., Siasi I.), Tawitawi.

Zellera Martens**Zellera tawallina Martens**

Zellera tawallina Martens, 1868:33, pl. VIII: fig. 3 [type locality: Little Tawali I., Moluccas, Indonesia].—Reyes, 1980:139, pl. 12: fig. 2.—Saraya and Trono, 1982:48.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. SÍQUIJOR.

Family DASYACEAE**Dasya C. Agardh****Dasya adhaerens Yamada**

Dasya adhaerens Yamada, 1944:43, pl. 7: fig. 1 [type locality: Ant Atoll, near Ponape, Caroline Is.].—Cordero, 1977a:231, fig. 261; 1978a:49.

PHILIPPINE DISTRIBUTION.—BATANES.

Dasya baillouviana (S.G. Gmelin) Montagne

Fucus baillouviana S.G. Gmelin, 1768:165 [type locality: Mediterranean Sea].

Dasya baillouviana (S.G. Gmelin) Montagne, 1841 [1839–1842]:165.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

Dasya mollis Harvey

Dasya mollis Harvey, 1853:62 [type locality: Key West, Florida, USA].—Vannajan and Trono, 1978:25, fig. 37.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

Dasya ocellata (Grateloup) Harvey

Ceramium ocellatum Grateloup, 1806: pl. [1]: fig. II [type locality: Sète, Hérault, France].

Dasya ocellata (Grateloup) Harvey, 1833:335.—Cordero, 1977a:231, fig. 262; 1978a:49.

PHILIPPINE DISTRIBUTION.—BATANES.

Dasya punicea (Zanardini) Meneghini

Baillouviana punicea Zanardini, 1840b:204² [type locality: Chioggia, Italy]

Dasya punicea (Zanardini) Meneghini in Zanardini, 1841:168.—Cordero, 1977a:232, fig. 263; 1978a:49.

PHILIPPINE DISTRIBUTION.—BATANES.

Dasya sessilis Yamada

Dasya sessilis Yamada, 1928:524, fig. 19 [syntype localities: various, all in Japan].—Cordero, 1977a:234, figs. 264, 265; 1984a:105.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan.

Eupogodon Kützing

The reason for adopting *Eupogodon* for the genus currently known as *Dasyopsis* is given in the appended Nomenclatural Notes.

***Eupogodon antillarum* (Howe) P.C. Silva, new combination**

Dasyopsis antillarum Howe, 1920:577 [type locality: Fort George Cay, Caicos Is., Bahama Is.].—Trono and Ang, 1982:22.

PHILIPPINE DISTRIBUTION.—PALAWAN (Bugsuk I.).

***Eupogodon pilosus* (Weber-van Bosse) P.C. Silva, new combination**

Dasyopsis pilosa Weber-van Bosse, 1923:377, fig. 137 [syntype localities: Indonesia: Waroe, Ceram I., Moluccas; Atja Tuning (Attiatti Onin), Irian Barat].—Cordero, 1977a:234, fig. 266.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental.

Heterosiphonia Montagne

***Heterosiphonia crispella* (C. Agardh) Wynne**

Callithamnion crispellum C. Agardh, 1828:183 [lectotype locality: near Cádiz, Spain fide Wynne, 1985b:86].

Heterosiphonia crispella (C. Agardh) Wynne, 1985b:87.

Dasya wurdemannii Bailey ex Harvey, 1853:64, pl. XV:c ["wurdemannii"] [type locality: Key West, Florida, USA].

Heterosiphonia wurdemannii (Bailey ex Harvey) Falkenberg in Schmitz and Hauptfleisch, 1897 [1896–1897]:473 ["wurdemannii"].—Vannajan and Trono, 1978:25, fig. 38.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

NOTE.—The conspecificity of *Callithamnion crispellum* and *Dasya wurdemannii* was proposed by Wynne (1985b).

***Heterosiphonia crispella* (C. Agardh) Wynne
var. *laxa* (Børgesen) Wynne**

Heterosiphonia wurdemannii (Bailey ex Harvey) Falkenberg var. *laxa* Børgesen, 1919:327, figs. 327, 328 [type locality: St. Croix, Virgin Is.].—Fortes, 1981b:396.

Heterosiphonia crispella (C. Agardh) Wynne var. *laxa* (Børgesen) Wynne, 1985b:87.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Heterosiphonia muelleri* (Sonder) De Toni**

Dasya muelleri Sonder, 1855:525 [type locality: Port Phillip, Victoria, Australia].

Heterosiphonia muelleri (Sonder) De Toni, 1903:1237.—Weber-van Bosse, 1923:380.—Velasquez, Trono, and Doty, 1975:150.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

NOTE.—Parsons (1975:627) expressed doubt that tropical records of *Heterosiphonia muelleri* (including Weber-van Bosse's record from Sulu) are referable to this species.

***Tapeinodasya* Weber-van Bosse**

****Tapeinodasya bornetii* Weber-van Bosse**

Tapeinodasya bornetii Weber-van Bosse, 1904a:96, figs. 1, 2 ["bornetii"] [syntype localities: Saleyer (Selajar) I., Celebes, Indonesia; Sulu Archipelago].—Weber-van Bosse, 1923:381, figs. 138, 139, pl. X: figs. 1–4.—Velasquez, Trono, and Doty, 1975:165.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Pearl Bank, Sangasiapu I.).

Family RHODOMELACEAE

***Acanthophora* Lamouroux**

***Acanthophora aokii* Okamura**

Acanthophora aokii Okamura, 1934 [1933–1942]:35, pl. 318: figs. 15–17 ["aoki"] [syntype localities: Tainan and Kotosho (Hung-t'ou), Taiwan].—Cordero, 1977a:187, figs. 199, 200, 207; 1978a:48, 56; 1980b:60.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte. MINDORO: Oriental Mindoro. SAMAR: Western Samar, Eastern Samar. PANAY: Aklan.

***Acanthophora muscoides* (Linnaeus)
Bory de Saint-Vincent**

Fucus muscoides Linnaeus, 1753:1161 [type locality: Ascension I.].

Acanthophora muscoides (Linnaeus) Bory de Saint-Vincent, 1828 [1826–1829]:156.—Westernhagen, 1973a:64; 1974:112 (table I).—Cordero, 1977a:189, fig. 204; 1980b:61.—Trono and Ganzon-Fortes, 1980:97, fig. [s.n.].—Ganzon-Fortes, 1981:22.—Laserna et al., 1981:445.—Meñez and Calumpung, 1981:381.—Calumpung, 1982:145.—Cordero, 1984a:105.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Batangas, Quezon. NEGROS: Negros Oriental (Apo I.). CEBU (Mactan I.). SIKUJOR.

***Acanthophora spicifera* (Vahl) Børgesen**

Fucus spiciferus Vahl, 1802:44 [type locality: St. Croix, Virgin Is.].

Acanthophora spicifera (Vahl) Børgesen, 1910:201.—Weber-van Bosse, 1923:347.—Cantoria, Velasquez, and Valenzuela, 1951:296, footnote.—Domantay, 1962:287.—Galutira and Velasquez, 1964:510, pl. 5: fig. 18; pl. 9: figs. 37a,b.—Velasquez, 1968a:122, fig. 9.—Villones and Magdamo, 1968:27, fig. 23.—Velasquez, 1971:449, fig. 36.—Reyes, 1972:158.—Trono, 1972a:106.—Velasquez, 1972:63.—Trono, 1973d:20, pl. 11: fig. 10.—Trono and Biña, 1973:11.—Velasquez et al., 1973:32, pl. 14: fig. 67.—Westernhagen, 1973a:64.—Ortega, Alcalá, and Reyes, 1974:185, 186, 187.—Trono, 1974b:96.—

Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:125.—Cordero, 1977a:189, figs. 201, 203, pl. XXVI:A; 1978a:56.—Vannajan and Trono, 1978:25, fig. 36.—Trono, 1978:19.—Cordero, 1979b:295.—Puig and Cordero, 1979:42.—Velasquez, 1979b:230.—Cajipe et al., 1980:69.—Cordero, 1980b:61, pl. 40.—Liao and Sotto, 1980:99.—Moreland, 1980:43, 46.—Reyes, 1980:139, pl. 12: fig. 3.—Trono and Fortes, 1980:74.—Trono and Ganzon-Fortes, 1980:99, fig. [s.n.].—Trono, Velasquez, and Guevarra, 1980:79.—Ganzon-Fortes, 1981:22.—Guzman, 1981:42.—Laserna et al., 1981:445.—Meñez and Calumpang, 1981:381.—Trono and Azanza-Corales, 1981:744.—Trono and De Lara, 1981:19.—Calumpang, 1982:145.—Cordero, 1982a:60, 61.—Saraya and Trono, 1982:49.—Trono and Fortes, 1982:153.—Buchan-Antalan and Trono, 1983:19, fig. 2.—Hurtado-Ponce, 1983:144.—Cordero, 1984a:105; 1984b:66; 1984c:55.—Hurtado-Ponce, 1984:180.—Marcos-Anggarayngay, 1984a:58, fig. 48; 1984b:129.—Tungpalan, 1984:141.—Trono and Ganzon-Fortes, 1985:63.

Fucus acanthophorus Lamouroux, 1805:61, pl. XXX; pl. XXXI: fig. 1 [type locality: "Amérique septentrionale"].

Acanthophora thierryi Lamouroux, 1813:132 ["thierii"]—Montagne, 1844a:662.—Martens, 1868:100–101.—Velasquez, Trono, and Doty, 1975:125.

**Acanthophora orientalis* J. Agardh, 1863 [1851–1863]:820 [syntype localities: Marianas; "ad Manillam," Luzon].—Piccone, 1886:81, 90.—Heydrich, 1894:296.—Mazza, 1909:16.—De Toni, 1924:380.—Collado, 1926:129.—Howe, 1932:169, 170.—G. Blanco, 1938:512.—Montilla and Blanco, 1953:166.—Domantay, 1962:288.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:125.

Acanthophora spicifera (Vahl) Børjesen f. *orientalis* (J. Agardh) Weber-van Bosse, 1923:348.—Zaneveld, 1956:25 [var. *orientalis*]; 1959:106 [var. *orientalis*].—Bersamin et al., 1973:184 [var. *orientalis*].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Ilocos Sur, Pangasinan, Rizal, Manila, Cavite, Batangas, Quezon, Albay. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. MASBATE. SAMAR: Western Samar, Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. GUIMARAS. NEGROS: Negros Occidental (incl. Ilacaon I.), Negros Oriental (incl. Apo I.). CEBU (incl. Mactan I.). SIKUIJOR. MINDANAO: Zamboanga, Surigao del Sur, Davao. PALAWAN. SULU (incl. Siasi I.) Tawitawi.

NOTE.—The conspecificity of *Fucus spiciferus* and *Acanthophora thierryi* was proposed by Børjesen (1910:201). *Acanthophora orientalis* was added as a synonym by Weber-van Bosse (1923:348). Lamouroux, when establishing the genus *Acanthophora* on the basis of *Fucus acanthophorus* Lamouroux, was obliged to change the epithet in order to avoid the creation of a tautonym, which is proscribed by Article 23.4 of the ICBN. The new epithet was chosen to commemorate "M. Thierry fils, professeur de physique et de chimie à . . . Caen". Lamouroux's incorrect original spelling is automatically correctable in accordance with Article 73.1 of the ICBN.

Acrocystis Zanardini

Acrocystis nana Zanardini

Acrocystis nana Zanardini, 1872:145, pl. VIII:A [type locality: "Tangion Datu" (Cape Datu), boundary between Sarawak, Malaysia and West

Kalimantan, Indonesia].—Cordero, 1981a:173, fig. 2.—Meñez and Calumpang, 1981:381.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. CENTRAL VISAYAS.

Alsidium C. Agardh

Alsidium pusillum Dawson

Alsidium pusillum Dawson, 1963:20, pl. 3: figs. 1–4 [type locality: Academy Bay, Isla Santa Cruz, Galápagos].—Vannajan and Trono, 1978:28, fig. 34 [*A. pusillum* prox.].

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

Amansia Lamouroux

Amansia glomerata C. Agardh

Amansia glomerata C. Agardh, 1822a:194 [syntype localities: Hawaiian Is.; "Ravak" (Lawak), Waigeo I., Moluccas, Indonesia].—J. Agardh, 1863 [1851–1863]:1111.—Domantay, 1962:288.—Reyes, 1972:159.—Trono, 1972a:108; 1973a:139, fig. 21.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:126.—Cordero, 1976c:8; 1977a:192, figs. 205, 268; 1978a:54.—Trono, 1978:19.—Trono and Tuason, 1978:15.—Liao and Sotto, 1980:99.—Reyes, 1980:140, pl. 12: fig. 5.—Fortes, 1981b:396.—Meñez and Calumpang, 1981:381.—Saraya and Trono, 1982:49, pl. IX: fig. 2.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Quezon, Sorsogon. CATANDUANES. MARINDUQUE. NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SIKUIJOR. BASILAN. PALAWAN. SULU: Tawitawi.

Bostrychia Montagne

Bostrychia binderi Harvey

Bostrychia binderi Harvey, 1849 [1847–1849]:68, pl. XXVIII [in part] [type locality: Port Natal (Durban), South Africa].—Post, 1936:28, 30, 33; 1939:23.—Villones and Magdamo, 1968:28, fig. 27.—Trono, 1973a:138.—Cordero, 1977a:193, figs. 206, 208, 209.—Fortes, 1981b:396.—Meñez and Calumpang, 1981:381.—Saraya and Trono, 1982:49, pl. X: figs. 1–3.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Pangasinan, Batangas, Quezon. MINDORO: Oriental Mindoro. SIKUIJOR. PALAWAN.

Bostrychia calliptera (Montagne) Montagne

Rhodomela calliptera Montagne, 1840:197, pl. 5: fig. 2 [type locality: Cayenne, French Guiana].
Bostrychia calliptera (Montagne) Montagne, 1842b:661.—Post, 1938:206.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon.

Bostrychia intricata (Bory de Saint-Vincent) Montagne

Scytonema intricatum Bory de Saint-Vincent, 1829 [1826–1829]:225 ["intricata"] [lectotype locality: Falkland Is. fide Post, 1936:36, 40].

Bostrychia intricata (Bory de Saint-Vincent) Montagne, 1852:317.

Bostrychia mixta J. Hooker and Harvey, 1845a:270 [type locality: Bay of Islands, New Zealand].

NOTE.—The conspecificity of *Bostrychia intricata* and *B. mixta* was proposed by Post (1936:10, 36, 40), who adopted the later of the two names without comment. As pointed out by Papenfuss (1964:59), *Scytonema intricatum* is invalid because the generic name *Scytonema* is invalid (Articles 13.2 and 43 of the ICBN), being originally applied to a group of Cyanophyceae (Nostocaceae heterocystae) with an 1886 starting point (Article 13.1(e)). With the abandonment of later starting points in the Cyanophyceae, however, *Scytonema intricatum* becomes available.

TAXON OF UNCERTAIN VALUE

Philippine records for *Bostrychia intricata* are under the following infraspecific taxon, which has not been formally transferred to it.

Bostrychia mixta J. Hooker and Harvey f. *inermis* Post

Bostrychia mixta J. Hooker and Harvey f. *inermis* Post, 1936: 7, 42 [syntype localities: Indonesia; Queensland, Australia].—Post, 1938:211.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal.

Bostrychia kelanensis Grunow

Bostrychia kelanensis Grunow in Post, 1936:20 [type locality: Kelana, Papua New Guinea].—Post, 1936:20, 21, 22; 1938:205.—Tanaka, 1967:20, figs. 9, 10, pl. II:A.—Velasquez, Trono, and Doty, 1975:129.—Cordero, 1977a:193.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Rizal. SULU: Sulu.

Bostrychia moritziana (Sonder ex Kützing) J. Agardh

Polysiphonia (?) *moritziana* Sonder ex Kützing, 1849:838 [syntype localities: Antilles; Cayenne, French Guiana].

Bostrychia moritziana (Sonder ex Kützing) J. Agardh, 1863 [1851–1863]:862.—Post, 1938:204; 1939:15.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal, Quezon.

Bostrychia radicans (Montagne) Montagne

Rhodomela radicans Montagne, 1840:198, pl. 5: fig. 3 [type locality: Cayenne, French Guiana].

Bostrychia radicans (Montagne) Montagne, 1842b:661.—Post, 1938:205; 1939:15, 16.—Hamoy and Garciano, 1975:71.—Fortes and Trono, 1980:65, fig. 9.—Trono and Fortes, 1980:74.—Fortes, 1981b:396.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:153.

Bostrychia rivularis Harvey, 1853:57, pl. XIV:c [syntype localities: various, all in Atlantic USA].—Hamoy and Garciano, 1975:71.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal, Quezon. MINDORO: Oriental Mindoro. CEBU.

NOTE.—The synonymy was proposed by Post (1936:13–19).

Bostrychia simpliciuscula Harvey ex J. Agardh

Bostrychia simpliciuscula Harvey ex J. Agardh, 1863 [1851–1863]:854 [type locality: Tonga].

Bostrychia tenuis Post f. *simpliciuscula* (Harvey ex J. Agardh) Post, 1936:23.—Post, 1938:205; 1939:16.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal, Quezon.

NOTE.—Post (1936:22) erred in establishing a new species, *Bostrychia tenuis*, to which she assigned two existing species, *B. simpliciuscula* and *B. andoi* Okamura 1907.

Bostrychia tenella (Lamouroux) J. Agardh

Fucus tenellus Vahl, 1802:45 [type locality: St. Croix, Virgin Is.].

Plocamium tenellum Lamouroux, 1813:138.

Bostrychia tenella (Lamouroux) J. Agardh, 1863 [1851–1863]:869.—Post, 1936:25, 26; 1938:206.—Trono, 1973a:138.—Cordero, 1976c:10; 1977a:195, fig. 210; 1978a:52; 1979b:295.—Reyes, 1980:140, pl. 12, fig. 6.—Meñez and Calumpung, 1981:381.—Cordero, 1984b:67.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Quezon. MINDORO: Oriental Mindoro. PANAY: Aklan. SIQUIJOR. PALAWAN.

NOTE.—*Fucus tenellus* Vahl, the intended basionym of *Bostrychia tenella*, is a later homonym of *F. tenellus* Esper (1800:197, pl. CIX) and hence not priorable. *Plocamium tenellum* Lamouroux is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

Chondria C. Agardh

Chondria armata (Kützing) Okamura

Lophura armata Kützing, 1866:2, pl. 3: figs. a, b [type locality: New Caledonia].

Chondria armata (Kützing) Okamura, 1907 [1907–1909]:69.—Quisumbing, 1951:1008.—Cordero, 1977a:195, fig. 211, pl. XXVI:c; 1980b:62.—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Quezon, Sorsogon. CENTRAL VISAYAS.

Chondria crassicaulis Harvey

Chondria crassicaulis Harvey, 1860a:330 [syntype localities: Shimoda and Hakodate, Japan].—Cordero, 1977a:196, fig. 212.

PHILIPPINE DISTRIBUTION.—PALAWAN.

Chondria curvilineata Collins and Hervey

Chondria curvilineata Collins and Hervey, 1917:120, pl. II: figs. 10, 11 [type locality: Heron Bay, Bermuda].—Meñez and Calumpung, 1981:381.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Chondria dasyphylla* (Woodward) C. Agardh**

Fucus dasyphyllus Woodward, 1794:239, pl. 23: figs. 1–3 [syntype localities: Cromer and Yarmouth, Norfolk, England].

Chondria dasyphylla (Woodward) C. Agardh, 1817:xviii.—Weber-van Bosse, 1923:352.—Velasquez, Trono, and Doty, 1975:135.—Cordero, 1977a:196, fig. 213; 1978a:55.—Chan, 1981:387.—Cordero, 1984a:106.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan. LEYTE. SULU: Sulu (North Ubian I.).

***Chondria polyrhiza* Collins and Hervey**

Chondria polyrhiza Collins and Hervey, 1917:121, pl. II: fig. 12 [type locality: Shelly Bay, Bermuda].—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Chondria repens* Børgesen**

Chondria repens Børgesen, 1924:299, figs. 40, 41 [type locality: Isla de Pascua (Easter Island)].—Cordero, 1977a:198, fig. 214; 1980b:63.—Saraya and Trono, 1982:50.—Cordero, 1984a:106.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Cavite (Corregidor I.). SIKUIJOR.

***Chondria sedifolia* Harvey**

Chondria sedifolia Harvey, 1853:19, pl. XVIII:G [type locality: Key West, Florida, USA].—Reyes, 1980:141, pl. 13, fig. 5.

PHILIPPINE DISTRIBUTION.—SIKUIJOR.

***Chondria seticulosa* (Forsskål) C. Agardh**

Conferva seticulosa Forsskål, 1775:188 [type locality: Mokha, Yemen].

Chondria seticulosa (Forsskål) C. Agardh, 1822a:345.

Laurencia seticulosa (Forsskål) Greville, 1830:lii.—Quisumbing, 1951:1010.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte.

****Chondria sibogae* Weber-van Bosse**

Chondria sibogae Weber-van Bosse, 1923:350, fig. 134. [syntype localities: Lombok I. and Borneo Bank, Indonesia; North Ubian I., Sulu Prov., Sulu Archipelago].—Velasquez, Trono, and Doty, 1975:135.

PHILIPPINE DISTRIBUTION.—As above.

Digenea* C. Agardh**Digenea simplex* (Wulfen) C. Agardh**

Conferva simplex Wulfen, 1803:17 [type locality: Trieste, Italy].

Digenea simplex (Wulfen) C. Agardh, 1822a:389.—G. Blanco, 1938:512.—Quisumbing, 1951:49.—Sulit, Navarro, and San Juan, 1952:167.—Montilla and Blanco, 1953:166, fig. 5:3.—Antonio, 1962:

13.—Domantay, 1968:26.—Velasquez, 1971:449, fig. 35.—Trono, 1973a:140, fig. 16.—Cordero, 1976c:6, 8, 10; 1977a:200, figs. 216, 217; 1978a:52; 1980b:63, fig. 24, pl. 41.—Moreland, 1980:51.—Trono and Fortes, 1980:74.—Ganzon-Fortes, 1981:22.—Trono and Fortes, 1982:153.—Tungpalan, 1984:138.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Bataan, Manila, Batangas, Quezon, Sorsogon. PALAWAN.

Enantiocladia* Falkenberg**Enantiocladia okamurai* Yamada**

Enantiocladia okamurai Yamada, 1930b:27 [*"okamurai"*] [syntype localities: various, all in Japan].—Cordero, 1977a:201, fig. 220.—Marcos-Anggarayngay, 1984a:60, fig. 50.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

Endosiphonia* Zanardini**Endosiphonia spinuligera* Zanardini**

Endosiphonia spinuligera Zanardini, 1878:35 [type locality: Wokam I., Aru Is., Indonesia].—Weber-van Bosse, 1923:354.—Velasquez, Trono, and Doty, 1975:142.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Pearl Bank, Sangasipau I.).

Exophyllum* Weber-van Bosse***Exophyllum wentii* Weber-van Bosse**

Exophyllum wentii Weber-van Bosse, 1911:29 [syntype localities: Savu I. and Borneo Bank, Indonesia; North Ubian I., Sulu Prov., Sulu Archipelago].—Weber-van Bosse, 1928:478.—Velasquez, Trono, and Doty, 1975:144

PHILIPPINE DISTRIBUTION.—As above.

NOTE.—This alga, long considered of uncertain taxonomic position, was assigned to the Rhodomelaceae by Hollenberg (1968d:81) on the basis of newly discovered spermatangial plants.

Herposiphonia* Nägeli**Herposiphonia crassa* Hollenberg**

Herposiphonia crassa Hollenberg, 1968c:539, figs. 12, 13 [type locality: Kahakuloa Bay, Maui, Hawaiian Is.].—Saraya and Trono, 1982:51.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Herposiphonia delicatula* Hollenberg**

Herposiphonia delicatula Hollenberg, 1968c:540, figs. 1A,B, 2H, 3 [including Philippine record] [type locality: Falas I., Truk Is., Caroline Is.].—Velasquez, Trono, and Doty, 1975:149.

PHILIPPINE DISTRIBUTION.—MINDANAO: Davao.

***Herposiphonia dendroidea* Hollenberg**

Herposiphonia dendroidea Hollenberg, 1968c:543, figs. 1c–e, 9 [type locality: Raroia Atoll, Tuamotu Archipelago].—Fortes and Trono, 1980:65, fig. 12.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LEYTE (Biliran I.).

***Herposiphonia dendroidea* var. *minor* Hollenberg**

Herposiphonia dendroidea var. *minor* Hollenberg, 1968c:543, figs. 7, 24 [type locality: Raroia Atoll, Tuamotu Archipelago].—Fortes and Trono, 1980:66, fig. 14.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—SAMAR: Eastern Samar (Manican I.). CEBU.

***Herposiphonia nuda* Hollenberg**

Herposiphonia nuda Hollenberg, 1968c:548, figs. 2E,F, 8 [type locality: Ilio Point, Molokai, Hawaiian Is.].—Chan, 1981:387.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Herposiphonia obscura* Hollenberg**

Herposiphonia obscura Hollenberg, 1968c:549, fig. 25 [type locality: Ewa Beach, Oahu, Hawaiian Is.].—Fortes and Trono, 1980:66, fig. 13.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—CEBU.

***Herposiphonia pacifica* Hollenberg**

Herposiphonia pacifica Hollenberg, 1968c:549, figs. 2A,B, 4, 19 [including Philippine record] [type locality: Maalea, Maui, Hawaiian Is.].—Velasquez, Trono, and Doty, 1975:149.

PHILIPPINE DISTRIBUTION.—MINDANAO: Surigao.

***Herposiphonia parca* Setchell**

Herposiphonia parca Setchell, 1926:103, pl. 20: fig. 2 [type locality: Arue Reef, Tahiti].—Hollenberg, 1968c:552.—Velasquez, Trono, and Doty, 1975:149.—Fortes and Trono, 1980:66.—Chan, 1981:387.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. LEYTE. MINDANAO: Davao. PALAWAN (Balabac I.). SULU: Sulu (Cagayan Sulu I., Siasi I.).

***Herposiphonia plumula* (J. Agardh) Falkenberg**

Polysiphonia plumula J. Agardh, 1885:99 [type locality: Santa Barbara, California, USA].
Herposiphonia plumula (J. Agardh) Falkenberg, 1901:728.—Marcos-Angarayngay, 1984a:60, fig. 51 [miscited fig. 53].

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Herposiphonia secunda* (C. Agardh) Ambronn**

Hutchinsia secunda C. Agardh, 1824:149 [type locality: Mediterranean Sea].

Herposiphonia secunda (C. Agardh) Ambronn, 1880:197.

Herposiphonia tenella (C. Agardh) Ambronn f. *secunda* (C. Agardh) Hollenberg, 1968c:556.—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS. MINDANAO: Surigao.

***Herposiphonia secunda* (C. Agardh) Ambronn
f. *tenella* (C. Agardh) Wynne**

Hutchinsia tenella C. Agardh, 1828:105 [type locality: Sicily].

Herposiphonia tenella (C. Agardh) Ambronn, 1880:197.—Hollenberg, 1968c:555.—Cornejo and Velasquez, 1972:181, pl. 3: fig. 22.—Velasquez, Trono, and Doty, 1975:149.—Vannajan and Trono, 1978:26.—Chan, 1981:387, 389.—Fortes, 1981b:396.—Meñez and Calumpong, 1981:382.—Saraya and Trono, 1982:50, pl. X: fig. 4.

Herposiphonia secunda (C. Agardh) Ambronn f. *tenella* (C. Agardh) Wynne, 1985a:173.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite, Batangas. CENTRAL VISAYAS. PALAWAN (Balabac I.). SULU: Sulu (Siasi I.).

NOTE.—Hollenberg (1968c:556) reduced *Herposiphonia secunda* to the rank of a form of *Herposiphonia tenella*. Because *Hutchinsia secunda* C. Agardh (1824:149), the basionym of *Herposiphonia secunda*, is older than *Hutchinsia tenella* C. Agardh (1828:105), the basionym of *Herposiphonia tenella*, the relationship of the two taxa must be reversed.

***Herposiphonia subdisticha* Okamura**

Herposiphonia subdisticha Okamura, 1899a:37, pl. I: figs. 12–14 [syntype localities: Enoshima, Kanagawa Prefecture and "Boshu" (Chiba Prefecture), Japan].—Cordero, 1976c:8, 10; 1977a:202, figs. 218, 219; 1978a:53; 1984a:106.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte.

***Herposiphonia trichia* Hollenberg**

Herposiphonia trichia Hollenberg, 1968c:557, fig. 1g [type locality: Yap I., Caroline Is.].—Fortes and Trono, 1980:66.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

Laurencia* Lamouroux**Laurencia brongniartii* J. Agardh**

Laurencia brongniartii J. Agardh, 1841:20 [type locality: Martinique].—Cordero, 1977a:204, pl. XXVII:A.—Hurtado-Ponce, 1983:145; 1984:180.—Marcos-Angarayngay, 1984a:55, fig. 45; 1984b:129.

Laurencia concinna Montagne, 1842a:6 [type locality: Toud I. [Warrior

Islet], Torres Strait, Australia].—Dickie, 1876a:245.—Weber-van Bosse, 1923:346.—Velasquez, Trono, and Doty, 1975:151.

Laurencia grevilleana Harvey, 1855:545 [type locality: Rottneet I., Western Australia, Australia].—Tahil, 1978:52.—Guzman, 1981:44.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. CEBU (Mactan I.). MINDANAO: Zamboanga. SULU: Sulu (North Ubian I., Tongquil I.).

NOTE.—The synonymy was proposed by Saito and Womersley 1974:839).

Laurencia capituliformis Yamada

Laurencia capituliformis Yamada, 1931b:217, pl. 14 [type locality: Oshima, Aomori Prefecture, Japan].—Cordero, 1977a:205.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

Laurencia caraibica P.C. Silva

Laurencia nana Howe, 1920:566 [type locality: Mariguana (Mayaguana) I., Bahama Is.] [replaced name].—Meñez and Calumpong, 1981:382.

Laurencia caraibica P.C. Silva, 1972:205.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

NOTE.—*Laurencia caraibica* is a substitute name for *L. nana* Howe, a later homonym of *L. nana* (C. Agardh) Greville (1830:lii).

Laurencia carolinensis Saito

Laurencia carolinensis Saito, 1969:154, figs. 6, 7 [type locality: Helen Reef, Caroline Is.].—Cordero, 1977a:205.

PHILIPPINE DISTRIBUTION.—PALAWAN.

Laurencia cartilaginea Yamada

Laurencia cartilaginea Yamada, 1931b:230, fig. o, pl. 19: fig. a [syntype localities: Chikuzen and Iyo provinces (Fukuoka and Ehime prefectures), Japan].—Meñez, 1961:76.—Saito, 1968:89; 1969:154.—Velasquez, 1971:453, fig. 38.—Cornejo and Velasquez, 1972:181, 182, 183.—Kraft, 1972:332.—Reyes, 1972:159.—Trono, 1972a:88; 1973d:22, pl. 11: fig. 11.—Trono and Biña, 1973:11.—Velasquez et al., 1973:32, pl. 14: fig. 68.—Ortega, Alcala, and Reyes, 1974:187.—Trono, 1974b:97; 1974e:18.—Velasquez, Trono, and Doty, 1975:151.—Cordero, 1977a:206, fig. 221; 1978a:57.—Puig and Cordero, 1979:42.—Liao and Sotto, 1980:99.—Trono and Fortes, 1980:75.—Trono and Ganzon-Fortes, 1980:101, fig. [s.n.].—Ganzon-Fortes, 1981:22.—Trono and De Lara, 1981:21, pl. XII: fig. 1.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Bataan, Batangas, Quezon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SIQUIJOR. SAMAR: Western Samar. LEYTE (incl. Biliran I.). PANAY: Iloilo. NEGROS: Negros Oriental. CEBU (Mactan I.). MINDANAO: Zamboanga (Sacol I.), Surigao. PALAWAN (incl. Cuyo I.). SULU: Sulu (Siasi I.), Tawitawi.

Laurencia ceylanica J. Agardh

Laurencia ceylanica J. Agardh, 1876:660 [type locality: Sri Lanka].—Meñez, 1961:76.—Velasquez, Trono, and Doty, 1975:151.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Laurencia chondrioides Børgesen

Laurencia chondrioides Børgesen, 1918:252, figs. 243–246 [type locality: St. Jan (St. John), Virgin Is.].—Westernhagen, 1973a:65; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Laurencia clavata Sonder

Laurencia clavata Sonder, 1853:694 [type locality: Lefevre Peninsula, South Australia, Australia].—Weber-van Bosse, 1923:346.—Velasquez, Trono, and Doty, 1975:151.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Tongquil I.).

Laurencia columellaris Børgesen

Laurencia columellaris Børgesen, 1945:53, figs. 28–30 [type locality: Réunion].—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

Laurencia composita Yamada

Laurencia composita Yamada, 1931b:236, figs. r, s, pl. 23 [syntype localities: Enoshima (Kanagawa Prefecture) and Merà (Chiba Prefecture), Japan].—Cordero, 1977a:206, pl. XXVIII:A.—Marcos-Agngarayngay, 1984a:55, fig. 46; 1984b:130.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. PALAWAN.

Laurencia corallopsis (Montagne) Howe

Sphaerococcus corallopsis Montagne, 1842c:49, pl. III: fig. 1 [type locality: La Habana, Cuba].—Martens, 1868:31, 96–97.—Velasquez, Trono, and Doty, 1975:151.

Laurencia corallopsis (Montagne) Howe, 1918:519.—Cordero, 1977a:208, fig. 222; 1978a:57.

PHILIPPINE DISTRIBUTION.—BATANES. MINDANAO: Zamboanga.

Laurencia decumbens Kützing

Laurencia decumbens Kützing, 1863:18 [type locality: New Caledonia].—Cordero, 1977a:208.

PHILIPPINE DISTRIBUTION.—SAMAR: Western Samar.

***Laurencia distichophylla* J. Agardh**

Laurencia distichophylla J. Agardh, 1852 [1851–1863]:762 [type locality: "in oceano australi?"].—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Laurencia forsteri* (Mertens ex Turner) Greville**

Fucus forsteri Mertens ex Turner, 1809:15, pl. 77 [lectotype locality: Australia (probably King George Sound, Western Australia) fide Saito and Womersley, 1974:824].

Laurencia forsteri (Mertens ex Turner) Greville, 1830:lii.—Cordero, 1977a:208.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Laurencia glandulifera* (Kützinger) Kützinger**

Chondria glandulifera Kützinger, 1845:329 [type locality: Trieste, Italy].

Laurencia glandulifera (Kützinger) Kützinger, 1849:855.—Westernhagen, 1973a:65; 1974:112 (table I).—Cordero, 1977a:209, fig. 223, pl. XXVII:D; 1984a:107.—Marcos-Agngarayngay, 1984b:130.—Tungpalan, 1984:141.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. CEBU (Mactan I.). SULU.

***Laurencia implicata* J. Agardh**

Laurencia implicata J. Agardh, 1852 [1852–1863]:745 [type locality: St. Croix, Virgin Is.].

Chondria intricata Montagne, 1842c:41 [type locality: Cuba].

Laurencia intricata (Montagne) Lamouroux ex J. Agardh, 1852 [1852–1863]:750 [footnote].—Cordero, 1976c:8; 1977a:210, figs. 225, 226; 1978a:58.—Trono and Ang, 1982:25.

PHILIPPINE DISTRIBUTION.—BATANES. PALAWAN (Bugsuk I.).

NOTE.—The name *Laurencia intricata* Lamouroux has been applied to this species, but it is not correct. Lamouroux (1813:131, pl. 9: figs. 8, 9) failed to provide a description, as did C. Agardh (1817:xviii) when transferring the species to *Chondria*. The first description was provided by Montagne under the name *Chondria intricata*. The species was returned to *Laurencia* by J. Agardh, but the resulting binomial is a later homonym of *L. intricata* Suhr (1840:265). The conspecificity of *L. implicata* J. Agardh and *L. intricata* (Montagne) Lamouroux ex J. Agardh was proposed by Howe (1918:518).

***Laurencia intermedia* Yamada**

Laurencia intermedia Yamada, 1931b:191, pl. 1: fig. c; pl. 2 [type locality: Enoshima, Kanagawa Prefecture, Japan].—Westernhagen, 1973a:65; 1974:112 (table I).—Cordero, 1977a:209, fig. 224; 1978a:57.—Guzman, 1981:42, 46, 47, 48.—Hurtado-Ponce, 1983:145.—Cordero, 1984a:107.—Hurtado-Ponce, 1984:180.—Tungpalan, 1984:141.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. CEBU (Mactan I.).

***Laurencia japonica* Yamada**

Laurencia japonica Yamada, 1931b:211, fig. L, pl. 11 [syntype localities: Amatsu and Emi, Chiba Prefecture, Japan].—Meñez, 1961:77.—Saito, 1968:86; 1969:152.—Velasquez, Trono, and Doty, 1975:151.—Trono and Ang, 1982:25.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Quezon. PALAWAN (incl. Bugsuk I.).

***Laurencia majuscula* (Harvey) Lucas**

Laurencia obtusa (Hudson) Lamouroux var. *majuscula* Harvey, 1863:xxvi [syntype localities: Rottneest I., Western Australia and Cape Shank, Bass Strait, Australia].

Laurencia majuscula (Harvey) Lucas, 1935:223.—Saito, 1968:84; 1969:149.—Velasquez, Trono, and Doty, 1975:151.—Cordero, 1977a:210, fig. 227.—Puig and Cordero, 1979:42.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Albay. LEYTE (incl. Biliran I.). SIKUIJOR. PALAWAN.

***Laurencia mariannensis* Yamada**

Laurencia mariannensis Yamada, 1931b:200, figs. F, G, pl. 5: fig. b [type locality: Saipan, Mariana Is.].—Saito, 1969:151.—Trono and Biña, 1973:11.—Velasquez, Trono, and Doty, 1975:151.—Saraya and Trono, 1982:52.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro.

***Laurencia nidifica* J. Agardh**

Laurencia nidifica J. Agardh, 1852[1852–1863]:749 [type locality: Hawaiian Is.].—Cordero, 1977a:211, fig. 228.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Bataan.

***Laurencia obtusa* (Hudson) Lamouroux**

Fucus obtusus Hudson, 1778:586 [syntype localities: Hastings, Sussex and Devonshire, England].

Laurencia obtusa (Hudson) Lamouroux, 1813:130.—Montagne, 1844a:662.—Martens, 1868:100–101.—Dickie, 1874a:192.—Cantoria, Velasquez, and Valenzuela, 1951:296, footnote.—Meñez, 1961:76.—Saito, 1968:84 [var. *obtusa*]; 1969:150 [var. *obtusa*].—Westernhagen, 1973a:65; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:151.—Cordero, 1977a:211, fig. 229; 1977a:213 [var. *obtusa*]; 1978a:58; 1979b:294; 1980b:64, pl. 42 [var. *obtusa*].—Trono and Fortes, 1980:75.—Fortes, 1981b:396.—Ganzon-Fortes, 1981:22.—Meñez and Calumpong, 1981:382.—Cordero, 1982a: fig. 14.—Saraya and Trono, 1982:53.—Trono and Ang, 1982:25.—Trono and Fortes, 1982:154.—Cordero, 1984a:107 [var. *obtusa*]; 1984c:55.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Albay. MASBATE. PANAY: Aklan. CEBU (Mactan I.). PALAWAN (Bugsuk I.).

***Laurencia obtusa* (Hudson) Lamouroux
var. *dendroidea* (J. Agardh) Yamada**

Laurencia dendroidea J. Agardh 1852 [1852-1863]:753 [type locality: Brazil].—Weber-van Bosse, 1923:343.—Velasquez, Trono, and Doty, 1975:151.

Laurencia obtusa (Hudson) Lamouroux var. *dendroidea* (J. Agardh) Yamada, 1931b:224.—Saito, 1968:84; 1969:150.

PHILIPPINE DISTRIBUTION.—MINDANAO. SULU: Sulu (North Ubian I.).

***Laurencia obtusa* (Hudson) Lamouroux var. *densa*
Yamada**

Laurencia obtusa (Hudson) Lamouroux var. *densa* Yamada, 1931b: 226 [type locality: Daibanratsu, Taiwan].—Cordero, 1977a:213.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

***Laurencia obtusa* (Hudson) Lamouroux
var. *snackeyi* (Weber-van Bosse) Yamada**

Laurencia paniculata (C. Agardh) J. Agardh var. *snackeyi* Weber-van Bosse, 1923:342 [type locality: Semau I., Indonesia].

Laurencia obtusa (Hudson) Lamouroux var. *snackeyi* (Weber-van Bosse) Yamada, 1931b:225.—Saito, 1968:85; 1969:151.

PHILIPPINE DISTRIBUTION.—MINDANAO.

***Laurencia okamurai* Yamada**

Laurencia okamurai Yamada, 1931b:206, figs. j, k, pl. 7 ["*okamurai*"] [syntype localities: various, in Japan and China].—Galutira and Velasquez, 1964:509, pl. 5: fig. 17; pl. 9: fig. 36.—Velasquez, 1972:63.—Cordero, 1977a:213, fig. 231; 1979b:294.—Velasquez, 1979b:230.—Trono and Fortes, 1980:75.—Ganzon-Fortes, 1981:23.—Guzman, 1981:43, 49.—Cordero, 1982a:60.—Trono and Fortes, 1982:154.—Marcos-Anggarayngay, 1984b:130.—Tungpalan, 1984:141.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Quezon. PANAY: Aklan.

***Laurencia palisada* Yamada**

Laurencia palisada Yamada, 1931b:196, figs. c, d, pl. 4: fig. a [syntype localities: Kotosho (Hung-t'ou) and Takao, Taiwan].—Cordero, 1977a:214, fig. 232, pl. XXVII:c,e; 1978a:59.

PHILIPPINE DISTRIBUTION.—BATANES. SIQUIJOR.

***Laurencia papillosa* (C. Agardh) Greville**

Fucus papillosus Forsskål, 1775:190 [type locality: Mokha, Yemen].

Chondria papillosa C. Agardh, 1822a:344.

Laurencia papillosa (C. Agardh) Greville, 1830:lii.—Montagne, 1844a:662.—Bailey and Harvey, 1862:713.—Martens, 1868:100-101.—Dickie, 1876a:244.—Quisumbing, 1951:1011.—Zaneveld, 1956:44; 1959:123.—Domantay, 1962:292.—Galutira and Velasquez, 1964:509, pl. 5: fig. 16; pl. 9: fig. 35a,b.—Saito, 1968:92.—Villones

and Magdamo, 1968:29, fig. 31.—Saito, 1969:158.—Velasquez, 1971:449, fig. 37.—Cornejo and Velasquez, 1972:172.—Kraft, 1972:328.—Reyes, 1972:159.—Trono, 1972a:107.—Velasquez, 1972:63.—Cordero, 1973b:33.—Bersamin et al., 1973:187.—Trono, 1973d:21, pl. 11: fig. 9.—Trono and Biña, 1973:12.—Velasquez et al., 1973:32, pl. 14: fig. 69.—Westernhagen, 1973a:65.—De Leon, 1974:31, 32 photo [s.n.], fig. [s.n.].—Ortega, Alcala, and Reyes, 1974:187.—Trono, 1974b:96; 1974e:18.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:151.—Cordero, 1976c:10; 1977a:215, figs. 233-235; 1978a:58; 1979b:276.—Velasquez, 1979b:230.—Cordero, 1980b:64, fig. 25, pl. 43.—Liao and Sotto, 1980:100.—Reyes, 1980:139, pl. 12: fig. 4a,b.—Trono and Fortes, 1980:74.—Trono and Ganzon-Fortes, 1980:103, fig. [s.n.].—Ganzon-Fortes, 1981:23.—Meñez and Calumpong, 1981:382.—Trono and De Lara, 1981:21, pl. XII: fig. 2.—Calumpong, 1982:145.—Cordero, 1982a:60.—Saraya and Trono, 1982:51.—Trono and Fortes, 1982:154.—Hurtado-Ponce, 1983:145.—Cordero, 1984a:107; 1984b:67; 1984c:56.—Hurtado-Ponce, 1984:180.—Marcos-Anggarayngay, 1984a:57, fig. 47; 1984b:130.—Tungpalan, 1984:141.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Batangas, Quezon, Albay. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MASBATE. SAMAR: Western Samar, Eastern Samar. LEYTE (incl. Biliran I.). PANAY: Aklan, Antique (incl. Panagatan Cays). NEGROS: Negros Occidental (incl. Ilacaon I.), Negros Oriental (incl. Apo I.). CEBU (incl. Mactan I.). SIQUIJOR. MINDANAO: Zamboanga (incl. Sacol I.), Surigao del Sur. PALAWAN (incl. Cuyo I.). SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—*Fucus papillosus* Forsskål, the intended basionym of *Laurencia papillosa*, is a later homonym of *F. papillosus* S.G. Gmelin (1768:188) and hence not priorable. *Chondria papillosa* C. Agardh is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Laurencia parvipapillata* Tseng**

Laurencia parvipapillata Tseng, 1943:204, pl. IV [type locality: Cape d'Aguilar, Hong Kong].—Saito, 1968:93; 1969:159.—Velasquez, Trono, and Doty, 1975:151.—Meñez and Calumpong, 1981:382.—Saraya and Trono, 1982:52, pl. XI: fig. 2.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CENTRAL VISAYAS. PALAWAN.

***Laurencia patentiramea* (Montagne) Kützing**

Chondria obtusa (Hudson) C. Agardh var. *patentiramea* Montagne, 1836:322, pl. 18: fig. 3 [type locality: Mèze, Hérault, France].

Laurencia patentiramea (Montagne) Kützing, 1849:854.

Chondria obtusa (Hudson) C. Agardh var. *paniculata* C. Agardh, 1822a:343 [type locality: Adriatic Sea].

Laurencia paniculata (C. Agardh) J. Agardh, 1852 [1852-1863]:755.—Cordero, 1977a:214, fig. 230; 1979b:294.—Meñez and Calumpong, 1981:382.—Saraya and Trono, 1982:52.—Trono and Ang, 1982:24.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CENTRAL VISAYAS. LEYTE (Biliran I.). PANAY: Aklan. PALAWAN (incl. Bugsuk I.). SULU: Sulu (Siasi I.).

NOTE.—The conspecificity of *Laurencia patentiramea* and *L. paniculata* was proposed by Ardissonne (1883:329). As a species, *L. patentiramea* dates from 1843, as *Chondria patentiramea* (Montagne) Kützinger (1843b:437), while *L. paniculata* dates from 1852. Moreover, *L. paniculata* (C. Agardh) J. Agardh is a later homonym of *L. paniculata* Kützinger (1849:855).

Laurencia pinnata Yamada

Laurencia pinnata Yamada, 1931b:242, pl. 28 [type locality: Enoshima (Kanagawa Prefecture), Japan].—Ortega, Alcalá, and Reyes, 1974:186, 187.—Velasquez, Trono, and Doty, 1975:151.—Cordero, 1976c:10; 1977a:217, fig. 236, pl. XXVII:B.—Cordero, 1978a:59 [*L. pinnata* prox.].—Hurtado-Ponce, 1983:145.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Batangas. NEGROS: Negros Oriental.

Laurencia poiteaui (Lamouroux) Howe

Fucus poiteaui Lamouroux, 1805:63, pl. XXXI: figs. 2, 3 ["poitei"] [type locality: Santo Domingo, Dominican Republic].

Laurencia poiteaui (Lamouroux) Howe, 1918:518 ["poitei"].—Westernhagen, 1973a:65; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

NOTE.—Lamouroux, in naming this species after its collector, Pierre Antoine Poiteau, incorrectly spelled the epithet *poitei*. This spelling is automatically correctable in accordance with Article 73.1 of the ICBN.

Laurencia subsimplex Tseng

Laurencia subsimplex Tseng, 1943:202, pl. III: figs. 4–6 [type locality: Big Wave Bay, Hong Kong].—Saito, 1968:87; 1969:153.—Velasquez, Trono, and Doty, 1975:151.

PHILIPPINE DISTRIBUTION.—CATANDUANES.

Laurencia surculigera Tseng

Laurencia surculigera Tseng, 1943:192, pl. I: figs. 4, 5 [type locality: Stanley Bay, Hong Kong].—Fortes and Trono, 1980:67.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

**Laurencia tranoi* Ganzon-Fortes

Laurencia tranoi Ganzon-Fortes, 1983:404, figs. 1, 2 [type locality: Batangas Prov., Luzon].—Trono and Ganzon-Fortes, 1980:105, fig. [s.n.] [*Laurencia* sp.].—Ganzon-Fortes and Trono, 1982:27, figs. 1, 2 [*Laurencia* sp.].

PHILIPPINE DISTRIBUTION.—As above.

Laurencia tropica Yamada

Laurencia tropica Yamada, 1931b:233, figs. B, Q, pl. 20 [type locality: Saipan, Mariana Is.].—Cordero, 1977a:217, fig. 237.—Marcos-Agungarayngay, 1984b:130.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. SIKUJOR.

Laurencia undulata Yamada

Laurencia undulata Yamada, 1931b:243, fig. T, pl. 29: fig. a [type locality: Enoshima, Kanagawa Prefecture, Japan].—Westernhagen, 1973a:65; 1974:112 (table I).—Cordero, 1977a:219, figs. 238, 239; 1978a:59 [*L. undulata* prox.].—Tahil, 1978:52.—Puig and Cordero, 1979:42.—Cordero, 1980b:65, pl. 44; 1984a:108; 1984c:56.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Quezon. MASBATE. LEYTE (Biliran I.). CEBU (Mactan I.). SIKUJOR.

Laurencia venusta Yamada

Laurencia venusta Yamada, 1931b:203, fig. H, pl. 6: fig. a [syntype localities: Koshiki-jima (Kagoshima Prefecture) and Goto (Nagasaki Prefecture), Japan].—Saraya and Trono, 1982:53.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Laurencia yamadana Howe

Laurencia yamadana Howe, 1934:37, fig. 4 [type locality: Kaneohe Bay, Oahu, Hawaiian Is.].—Trono, 1973d:22.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

Leveillea Decaisne

Leveillea jungermannioides (Hering and Martens) Harvey

Amansia jungermannioides Hering and Martens in Martens and Hering, 1836:485, figs. 1–4 [type locality: Tor, Sinai Peninsula, Egypt].

Polyzonia jungermannioides (Hering and Martens) J. Agardh, 1841:25.—Piccone, 1886:84, 90.—Velasquez, Trono, and Doty, 1975:161.

Leveillea jungermannioides (Hering and Martens) Harvey, 1855:539 ["*Leveillia*"].—Meñez, 1961:75.—Reyes, 1972:159.—Cornejo and Velasquez, 1972:181, pl. 5: fig. 38.—Trono and Biña, 1973:12.—Trono, 1973d:21.—Velasquez, Trono, and Doty, 1975:151.—Cordero, 1976c:9; 1977a:221, fig. 244; 1978a:53.—Trono, 1978:20.—Trono and Tuason, 1978:16.—Vannajan and Trono, 1978:28, fig. 40.—Fortes and Trono, 1980:65.—Liao and Sotto, 1980:100.—Reyes, 1980:140, pl. 13: fig. 1.—Chan, 1981:387, 389.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:382.—Saraya and Trono, 1982:53, pl. XI: fig. 1.—Trono and Ang, 1982:22.—Marcos-Agungarayngay, 1984a:58, fig. 49.

Leveillea gracilis Decaisne, 1839:376 [type locality: Sri Lanka].—Martens, 1868:102–103.—Velasquez, Trono, and Doty, 1975:151.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasi-

nan, Manila, Cavite, Batangas. CATANDUANES. MINDORO: Oriental Mindoro. MARINDUQUE. MASBATE (Ticao I.). SAMAR: Western Samar. NEGROS: Negros Oriental. CEBU (Mac-tan I.). SIKUIJOR. MINDANAO: Zamboanga. PALAWAN (incl. Bugsuk I.).

NOTE.—The synonymy was proposed by Falkenberg (1901:392).

Lophocladia (J. Agardh) Schmitz

Lophocladia lallemandii (Montagne) Schmitz

Dasya lallemandii Montagne, 1849:289 ["lallemandi"] [type locality: Red Sea].

Lophocladia lallemandii (Montagne) Schmitz, 1893:223 ["lallemandi"].—Weber-van Bosse, 1923:362.—Velasquez, Trono, and Doty, 1975:152.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Pearl Bank).

Lophosiphonia Falkenberg

Lophosiphonia cristata Falkenberg

Lophosiphonia cristata Falkenberg, 1901:499, pl. 9: figs. 7–10 [type locality: Napoli, Italy].—Hollenberg, 1968d:80.—Velasquez, Trono, and Doty, 1975:152.

PHILIPPINE DISTRIBUTION.—CATANDUANES.

Murrayella Schmitz

Murrayella pericladus (C. Agardh) Schmitz

Hutchinsia pericladus C. Agardh, 1828:101 [type locality: St. Croix, Virgin Is.].

Murrayella pericladus (C. Agardh) Schmitz, 1893:227.—Fortes and Trono, 1980:67, fig. 15.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Neurymenia J. Agardh

Neurymenia fraxinifolia (Mertens ex Turner) J. Agardh

Fucus fraxinifolius Mertens ex Turner, 1811:140, pl. 193 [type locality: "East Indies"].

Neurymenia fraxinifolia (Mertens ex Turner) J. Agardh, 1863 [1852–1863]:1135.—Dickie, 1876a:245.—Trono, 1973a:139, fig. 20.—Velasquez, Trono, and Doty, 1975:156.—Cordero, 1976c:10; 1977a:222, figs. 242, 245; 1978a:55.—Saraya and Trono, 1982:54.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Sorsogon. SAMAR: Eastern Samar. MINDANAO: Zamboanga.

Polysiphonia Greville

Polysiphonia apiculata Hollenberg

Polysiphonia apiculata Hollenberg, 1968a:61, figs. 1D, 8, 9 [including Philippine record] [type locality: Pokai Bay, Oahu, Hawaiian Is.].—Velasquez, Trono, and Doty, 1975:160.

PHILIPPINE DISTRIBUTION.—PALAWAN (Balabac I.).

Polysiphonia beaudettei Hollenberg

Polysiphonia beaudettei Hollenberg in Hollenberg and Dawson, 1961:348, pl. 1: fig. 4 [type locality: Isla Grande, Guerrero, Mexico].—Hollenberg, 1968a:62.—Velasquez, Trono, and Doty, 1975:160.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Siasi I.), Tawitawi (Turtle Is.).

Polysiphonia ferulacea Suhr ex J. Agardh

Polysiphonia ferulacea Suhr ex J. Agardh, 1863 [1852–1863]:980 [syntype localities: Atlantic Mexico; Guadeloupe; Australia; Marquesas Is.; Hawaiian Is.].—Weber-van Bosse, 1923:357.—Velasquez, Trono, and Doty, 1975:160.—Trono and Ang, 1982:23.

PHILIPPINE DISTRIBUTION.—PALAWAN (Bugsuk I.). SULU: Sulu (Jolo I.).

Polysiphonia flabellulata Harvey

Polysiphonia flabellulata Harvey, 1860a:330 [type locality: Tanega-shima, Osumi-gunto, Japan].—Vannajan and Trono, 1978:29.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal.

Polysiphonia forfex Harvey

Polysiphonia forcipata Harvey, 1855:541 [lectotype locality: Rottneest I., Western Australia, Australia fide Womersley, 1979:495] [replaced name].—Cordero, 1977a:223.

Polysiphonia forfex Harvey, 1859: pl. XCVI.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—*Polysiphonia forfex* is a substitute name for *P. forcipata* Harvey, a later homonym of *P. forcipata* J. Agardh (1842:127).

Polysiphonia fragilis Suringar

Polysiphonia fragilis Suringar, 1867:259 [type locality: "in mari Japonico"].—Cordero, 1978a:50.

PHILIPPINE DISTRIBUTION.—BATANES.

Polysiphonia gorgoniae Harvey

Polysiphonia gorgoniae Harvey, 1853:39 [type locality: Key West, Florida, USA].—Cornejo and Velasquez, 1972:173, 180, pl. 5: figs. 37, 37a, 37b.—Velasquez, Trono, and Doty, 1975:161.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas.

***Polysiphonia hawaiiensis* Hollenberg**

Polysiphonia hawaiiensis Hollenberg, 1968a:66, figs. 2f, 16, 41 [including Philippine record] [type locality: Waikiki, Oahu, Hawaiian Is.].—Velasquez, Trono, and Doty, 1975:161.

PHILIPPINE DISTRIBUTION.—PALAWAN (Balabac I.). SULU: Tawitawi.

***Polysiphonia howei* Hollenberg**

Polysiphonia howei Hollenberg in W.R. Taylor, 1945:302, fig. 3 [type locality: Whale Cay, Berry Is., Bahama Is.].—Hollenberg, 1968b:203.—Velasquez, Trono, and Doty, 1975:161.—Cordero, 1976c:10; 1977a:224, fig. 243; 1978a:50.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. MINDANAO: Davao.

***Polysiphonia mollis* J. Hooker and Harvey**

Polysiphonia mollis J. Hooker and Harvey in Harvey, 1847 [1847–1849]:43 [type locality: Tasmania, Australia].—Weber-van Bosse, 1923:356 [with query].—Hollenberg, 1968a:69.—Velasquez, Trono, and Doty, 1975:161.—Cordero, 1977a:226, figs. 246–249; 1978a:51.—Meñez, Phillips, and Calumpong, 1983:23.—Meñez and Calumpong, 1984:105.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. PALAWAN. SULU: Sulu (North Ubian I.).

***Polysiphonia mollis* J. Hooker and Harvey
var. *tongatensis*
(Harvey ex Kützing) Hollenberg**

Polysiphonia tongatensis Harvey ex Kützing, 1864:14, pl. 41: figs. a–d [type locality: Tonga].

Polysiphonia mollis J. Hooker and Harvey var. *tongatensis* (Harvey ex Kützing) Hollenberg, 1968a:69 [including Philippine record].

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Siasi I.).

***Polysiphonia pacifica* Hollenberg**

Polysiphonia pacifica Hollenberg, 1942:777, figs. 2, 3, 12, 13 [type locality: Santa Cruz, California, USA].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Polysiphonia pacifica* Hollenberg var. *delicatula*
Hollenberg**

Polysiphonia pacifica Hollenberg var. *delicatula* Hollenberg, 1942:778 [type locality: Monterey, California, USA].—Fortes and Trono, 1980:67.

PHILIPPINE DISTRIBUTION.—SAMAR: Eastern Samar (Manicani I.).

***Polysiphonia poko* Hollenberg**

Polysiphonia poko Hollenberg, 1968a:70, fig. 3A [type locality: Johnson Atoll].—Chan, 1981:387.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Polysiphonia savatieri* Hariot**

Polysiphonia savatieri Hariot, 1891:226 [type locality: Yokosuka, Kanagawa Prefecture, Japan].—Hollenberg, 1968a:77.—Velasquez, Trono, and Doty, 1975:161.—Chan, 1981:387, 389.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDANAO: Surigao. PALAWAN (Balabac I.). SULU: Sulu (Cagayan Sulu I., Siasi I.).

***Polysiphonia scopulorum* Harvey**

Polysiphonia scopulorum Harvey, 1855:540 [type locality: Rottneest I., Western Australia, Australia].—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Polysiphonia scopulorum* Harvey var. *villum* (J. Agardh)
Hollenberg**

Polysiphonia villum J. Agardh, 1863 [1852–1863]:941 [type locality: “ad littus Americae tropicae” (Mexico)].

Polysiphonia scopulorum Harvey var. *villum* (J. Agardh) Hollenberg, 1968a:81 [including Philippine record].—Velasquez, Trono, and Doty, 1975:161 [without designation of variety].—Fortes and Trono, 1980:68.

PHILIPPINE DISTRIBUTION.—SAMAR: Eastern Samar (Manicani I.). MINDANAO: Davao.

***Polysiphonia setacea* Hollenberg**

Polysiphonia setacea Hollenberg, 1968a:85, figs. 5A–C [including Philippine record] [type locality: Koko Head, Oahu, Hawaiian Is.].—Velasquez, Trono, and Doty, 1975:161.—Cordero, 1977a:226, fig. 253.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDANAO: Surigao, Davao.

***Polysiphonia sparsa* (Setchell) Hollenberg**

Lophosiphonia sparsa Setchell, 1926:103, pl. 21: figs. 3, 4 [type locality: Arue Reef, Tahiti].

Polysiphonia sparsa (Setchell) Hollenberg, 1968a:87 [including Philippine record].—Velasquez, Trono, and Doty, 1975:161.

PHILIPPINE DISTRIBUTION.—PALAWAN (Balabac I.). SULU: Tawitawi.

***Polysiphonia sphaerocarpa* Børgesen**

Polysiphonia sphaerocarpa Børgesen, 1918:271, figs. 267–271 [type locality: St. Thomas, Virgin Is.].—Cornejo and Velasquez, 1972:180, pl. 5:

figs. 36, 36a,b.—Velasquez, Trono, and Doty, 1975:161.—Chan, 1981:387.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas.

Polysiphonia subtilissima Montagne

Polysiphonia subtilissima Montagne, 1840:199 [type locality: Cayenne, French Guiana].—Cordero, 1977a:226, figs. 250, 251.—Vannajan and Trono, 1978:28, fig. 35.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal, Manila, Cavite, Batangas.

Polysiphonia tepida Hollenberg

Polysiphonia tepida Hollenberg, 1958:65, fig. 1 [type locality: Beaufort, North Carolina, USA].—Cordero, 1977a:227, figs. 252, 254; 1978a:51.

PHILIPPINE DISTRIBUTION.—BATANES.

Polysiphonia triton P.C. Silva, new name

Polysiphonia tenuis Hollenberg, 1968a:92, figs. 6B,C [type locality: Johnson Atoll] [replaced name].—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

NOTE.—*Polysiphonia triton* is proposed as a substitute name for *P. tenuis* Hollenberg, a later homonym of *P. tenuis* (C. Agardh) E.M. Fries (1836[1835–1837]:314).

Polysiphonia tsudana Hollenberg

Polysiphonia tsudana Hollenberg, 1968b:205, figs. 1F,G, 2C [type locality: Laysan Islet, Leeward Is., Hawaiian Is.].—Fortes and Trono, 1980:68, fig. 10.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—PANAY: Iloilo.

Polysiphonia upolensis Grunow

Polysiphonia upolensis Grunow, 1874:49 [type locality: Upolu I., Western Samoa].—Hollenberg, 1968a:94.—Velasquez, Trono, and Doty, 1975:161.—Cordero, 1977a:227, figs. 255–257; 1978a:51.—Chan, 1981:387.—Meñez and Calumpong, 1981:382.—Saraya and Trono, 1982:51, pl. XI: fig. 3.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Pangasinan. CENTRAL VISAYAS. MINDANAO: Davao. PALAWAN (Balabac I.). SULU: Tawitawi (Turtle Is.).

NOTE.—Grunow published this species as *Polysiphonia (tongatensis* var.?) *upolensis*, which was his way of indicating some doubt that the new entity should be recognized at specific rank. Nonetheless, the binomial should be attributed directly to Grunow rather than to (Grunow) Hollenberg (1968a:94).

Tolypocladia Schmitz

Tolypocladia calodictyon (Harvey ex Kützing) P.C. Silva

Polysiphonia calodictyon Harvey ex Kützing, 1864:16, pl. 46: figs. a–c [type locality: Tonga].

Tolypocladia calodictyon (Harvey ex Kützing) P.C. Silva, 1952a:308.—Trono, 1972a:106; 1973a:137, fig. 17.—Trono and Ganzon-Fortes, 1980:107, fig. [s.n.].—Fortes, 1981b:396.—Saraya and Trono, 1982:54, pl. XI: fig. 4.—Trono and Ang, 1982:23.

Roschera africana Sonder, 1879:81, pl. I: figs. 5–11 [including Philippine record] [type locality: Zanzibar, Tanzania].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas, Sorsogon. PALAWAN (Bugsuk I.). SULU: Tawitawi.

NOTE.—*Roschera africana* is included as a synonym on the authority of Weber-van Bosse (1923:359).

**Tolypocladia condensata* (Weber-van Bosse) P.C. Silva

Roschera condensata Weber-van Bosse, 1913a: pl. V: fig. 3; 1923:359 [syntype localities: various in Indonesia; Sangiasapu I., Tawitawi Prov., Sulu Archipelago].—Velasquez, Trono, and Doty, 1975:162.

Tolypocladia condensata (Weber-van Bosse) P.C. Silva, 1952a:308.—Domantay, 1962:294.—Velasquez, Trono, and Doty, 1975:165.—Trono and Ang, 1982:24.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PALAWAN (Bugsuk I.). SULU: Tawitawi (Sangiasapu I.).

Tolypocladia glomerulata (C. Agardh) Schmitz

Hutchinsia glomerulata C. Agardh, 1824:158 [type locality: Shark Bay, Western Australia, Australia].

Tolypocladia glomerulata (C. Agardh) Schmitz in Schmitz and Hauptfleisch, 1897 [1896–1897]:442.—De Toni, 1903:964.—Cornejo and Velasquez, 1972:182, pl. 3: fig. 24.—Trono, 1973a:137; 1973d:21; 1974b:95.—Velasquez, Trono, and Doty, 1975:165.—Cordero, 1977a:229.—Vannajan and Trono, 1978:26, fig. 39.—Liao and Sotto, 1980:100.—Reyes, 1980:140, pl. 13, fig. 2a–c.—Chan, 1981:387.—Meñez and Calumpong, 1981:382.—Trono and De Lara, 1981:20, pl. XII: fig. 3.—Saraya and Trono, 1982:54.—Trono and Ang, 1982:23.—Meñez, Phillips, and Calumpong, 1983:18.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Cavite, Batangas. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SAMAR: Eastern Samar. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUJOR. MINDANAO: Zamboanga, Davao. PALAWAN (Bugsuk I.). SULU: Sulu (Siasi I.).

Vidalia Lamouroux ex J. Agardh

Vidalia obtusiloba (C. Agardh) J. Agardh

Rytiphlaea obtusiloba C. Agardh, 1824:161 [type locality: Brazil].

Vidalia obtusiloba (C. Agardh) J. Agardh, 1863 [1852–1863]:1123.—Cordero, 1976c:8, 10; 1977a:230, fig. 260; 1978a:54.

PHILIPPINE DISTRIBUTION.—BATANES.

FAMILIA INCERTAE SEDIS

Family WURDEMANNIACEAE

Wurdemannia Harvey***Wurdemannia miniata* (Sprengel) Feldmann and Hamel**

Fucus miniatus Draparnaud ex De Candolle, 1815:6 [type locality: Montpellier, Hérault, France].

Sphaerococcus miniatus Sprengel, 1827:340.

Wurdemannia miniata (Sprengel) Feldmann and Hamel, 1934:544.—Do-

mantay, 1962:294.—Cordero, 1976c:8; 1977a:77; 1978a:24.—Meñez and Calumpong, 1981:381.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. CENTRAL VISAYAS.

NOTE.—*Fucus miniatus* Draparnaud ex De Candolle, the intended basionym of *Wurdemannia miniata*, is a later homonym of *F. miniatus* O.F. Müller (1778:7, pl. 769) and hence not priorable. *Sphaerococcus miniatus* Sprengel is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

Class PHAEOPHYCEAE

Order ECTOCARPALES

Family ECTOCARPACEAE

Feldmannia Hamel

Feldmannia columellaris (Børgesen) Islam

Ectocarpus columellaris Børgesen, 1936:71, fig. 4 [type locality: Galle, Sri Lanka].—Saraya and Trono, 1980:26.

Feldmannia columellaris (Børgesen) Islam, 1976:32.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Feldmannia formosana (Yamada) Itono

Ectocarpus formosanus Yamada, 1950:182, fig. 3 [type locality: Ryukyu-sho (Lambai I.), Taiwan].

Feldmannia formosana (Yamada) Itono, 1973:162.—Cordero, 1981d:64, fig. 5 [*"formosanus"*].

PHILIPPINE DISTRIBUTION.—PANAY: Aklan.

Feldmannia indica (Sonder) Womersley and Bailey

Ectocarpus indicus Sonder in Zollinger, 1854:2, 3, footnote [type locality: Bima Bay, Sumbawa I., Indonesia].—Agor, 1962:34.—Cornejo and Velasquez, 1972:175, pl. 1: figs. 11, 11a.—Trono, 1972a:99.—Trono and Santos-Maranan, 1974a:2, fig. 1.—Velasquez, Trono, and Doty, 1975:141.—Vannajan and Trono, 1978:8, fig. 1.—Liao and Sotto, 1980:97.—Reyes, 1980:119, pl. 1: figs. 1a,b.—Chan, 1981:387, 389.—Fortes, 1981b:396.

Feldmannia indica (Sonder) Womersley and Bailey, 1970:288.

Ectocarpus duchassaingianus Grunow, 1867:45, footnote, pl. IV: fig. 1 [type locality: Guadeloupe].

Giffordia duchassaingiana (Grunow) W.R. Taylor, 1960:207, pl. 29: fig. 10 [*"duchassaingiana"*].—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite, Batangas. MINDORO: Oriental Mindoro. CEBU (Mactan I.). SQUIJOR. SULU: Tawitawi.

NOTE.—The synonymy was proposed by Womersley and Bailey (1970:288).

Feldmannia irregularis (Kützinger) Hamel

Ectocarpus irregularis Kützinger, 1845:234 [type locality: Adriatic Sea].—Cornejo and Velasquez, 1972:175, pl. 1: fig. 10.—Trono and Santos-Maranan, 1974a:2, fig. 2.—Velasquez, Trono, and Doty, 1975:141.

Feldmannia irregularis (Kützinger) Hamel, 1939:xvii.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. MINDORO: Oriental Mindoro.

Hincksia J.E. Gray

The reason for adopting *Hincksia* for the genus currently known as *Giffordia* is given in the appended Nomenclatural Notes.

Hincksia breviarticulata (J. Agardh) P.C. Silva, new combination

Ectocarpus breviarticulatus J. Agardh, 1847:7 [type locality: "St. Augustin" (Oaxaca, Mexico)].—Reyes, 1980:119, pl. 1: figs. 2a,b.

PHILIPPINE DISTRIBUTION.—SQUIJOR.

NOTE.—This species was assigned to *Feldmannia* by Phạm-Hoàng Hộ (1969:298). As noted by Womersley and Bailey (1970:288), however, it does not have the long unbranched filaments with basal meristems that are characteristic of that genus. It seems best placed in *Hincksia*.

Hincksia mitchelliae (Harvey) P.C. Silva, new combination

Ectocarpus mitchelliae Harvey, 1852:142, pl. XII. [*"mitchelliae"*] [type locality: Nantucket, Massachusetts, USA].—Trono and Santos-Maranan, 1974a:3, fig. 3.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Hincksia rallsiae (Vickers) P.C. Silva, new combination

Ectocarpus rallsiae Vickers, 1905:59 [type locality: Barbados].

Giffordia rallsiae (Vickers) W.R. Taylor, 1960:208.—Meñez and Calumpong, 1981:382.—Meñez, Phillips, and Calumpong, 1983:23.—Meñez and Calumpong, 1984:105.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS. PALAWAN.

Family RALFSIACEAE

Ralfsia Berkeley

Ralfsia fungiformis (Gunnerus) Setchell and Gardner

Fucus fungiformis Gunnerus, 1772:107 [type locality: Iceland].

Ralfsia fungiformis (Gunnerus) Setchell and Gardner, 1924b:11.—Agor, 1962:34.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Order CUTLERIALES**Family CUTLERIACEAE*****Cutleria* Greville*****Cutleria cylindrica* Okamura**

Cutleria cylindrica Okamura, 1902 [1900–1902]:85, pl. XXVIII [type locality: various, all in Japan].—Agor, 1962:34.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Order SPHACELARIALES**Family SPHACELARIACEAE*****Sphacelaria* Lyngbye*****Sphacelaria mucifera***

Sphacelaria mucifera.—Velasquez, 1980:127.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

NOTE.—Velasquez did not give an author for this name and we have been unable to find its place of publication.

***Sphacelaria novae-hollandiae* Sonder**

Sphacelaria novae-hollandiae Sonder, 1845:50 [type locality: Western Australia, Australia].—Liao and Sotto, 1980:97.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Sphacelaria rigidula* Kützting**

Sphacelaria rigidula Kützting, 1843b:292 [type locality: Red Sea].—Martens, 1868:23, 68–69.—Velasquez, Trono, and Doty, 1975:163.

Sphacelaria furcigera Kützting, 1855:27, pl. 90: fig. II [type locality: Karak (Khark) I., Iran].—Meñez, 1961:59, pl. 9: figs. 103, 104; pl. 10: figs. 105–108; pl. 12: figs. 126, 127.—Cornejo and Velasquez, 1972:175, 178, pl. 1: fig. 9; pl. 4: fig. 31.—Velasquez, Trono, and Doty, 1975:163.—Trono, 1976:214.—Liao and Sotto, 1980:97.—Chan, 1981:387.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:382.—Meñez, Phillips, and Calumpung, 1983:23.—Meñez and Calumpung, 1984:105.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas, Sorsogon. MINDORO. CEBU (Mactan I.). PALAWAN.

NOTE.—The synonymy was proposed by Prud'homme van Reine (1982:203).

***Sphacelaria tribuloides* Meneghini**

Sphacelaria tribuloides Meneghini, 1840:[2] [type locality: Golfo di Spezia, Italy].—Meñez, 1961:59, pl. 11: figs. 122–125.—Velasquez, Trono, and Doty, 1975:163.—Cordero, 1976c:9, 15, figs. E–I.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:26.—Chan, 1981:387.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:382.

Sphacelaria rigida Hering in Krauss, 1846:213 [type locality: "Natalbai" (Durban), South Africa].—Trono, 1978:9.—Liao and Sotto, 1980:97.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. MARINDUQUE. CEBU (Mactan I.).

NOTE.—The synonymy was proposed by Prud'homme van Reine (1982:179).

Order DICTYOTALES**Family DICTYOTACEAE*****Dictyopteris* Lamouroux******Dictyopteris camiguinensis* Tanaka**

Dictyopteris camiguinensis Tanaka, 1967:16, fig. 5, pl. 1:A [type locality: San Pio Quinto, Camiguin I., Babuyan Is., Cagayan Prov., Luzon].—Velasquez, Trono, and Doty, 1975:140.

PHILIPPINE DISTRIBUTION.—As above.

***Dictyopteris delicatula* Lamouroux**

Dictyopteris delicatula Lamouroux, 1809b:332, pl. 6: fig. 2B [type locality: Antilles].—Weber-van Bosse, 1913a:181.—Velasquez, Trono, and Doty, 1975:140.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS. SULU: Tawitawi (Pearl Bank).

***Dictyopteris divaricata* (Okamura) Okamura**

Haliseris divaricata Okamura, 1907 [1907–1909]:57, pl. XIII; pl. XIV: fig. 5 [syntype localities: Cape Iwai, Miyage Prefecture and Hakodate, Hokkaido, Japan].

Dictyopteris divaricata (Okamura) Okamura, 1932:75.—Cordero, 1980c:71, fig. 2.—Fortes, 1981b:396.—Cordero, 1984a:83.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Dictyopteris jamaicensis* W.R. Taylor**

Dictyopteris jamaicensis W.R. Taylor, 1960:631, pl. 32: fig. 2 [type locality: St. Catharine Parish, Jamaica].—Vannajan and Trono, 1978:9, fig. 3.—Saraya and Trono, 1980:27, pl. VII: figs. 1, 3.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite. CENTRAL VISAYAS.

***Dictyopteris polypodioides* (De Candolle) Lamouroux**

Fucus membranaceus Stackhouse, 1795 [1795–1801]:13, pl. 6 [type locality: Sidmouth, Devonshire, England].

Polypodoidea membranacea Stackhouse, 1809:97.

Dictyopteris membranacea (Stackhouse) Batters, 1902:54.—Cordero, 1984b:60.

Fucus polypodioides Desfontaines, 1799 [1798–1799]:421 [type locality: "mare Numidico" (Algeria)].

Ulva polypodioides De Candolle in Lamarck and De Candolle, 1805:15.
Dictyopteris polypodioides (De Candolle) Lamouroux, 1809b:332.

PHILIPPINE DISTRIBUTION.—PALAWAN.

NOTE.—The conspecificity of *Fucus membranaceus* Stackhouse and *Fucus polypodioides* Desfontaines was proposed by Turner (1809:41). Both names are later homonyms, however, of *F. membranaceus* N.L. Burman (1768:32 [28 in error]) and *F. polypodioides* S.G. Gmelin (1768:186), respectively. A legitimate basionym was created for *F. membranaceus* by Stackhouse (1809) in transferring it into a new genus, *Polypodoidea*, but in the meantime a legitimate basionym had been created for *F. polypodioides* by De Candolle (in Lamarck and De Candolle, 1805), who transferred it into *Ulva*. Both *Ulva polypodioides* and *Polypodoidea membranacea* are treated as legitimate new names in accordance with Article 72, Example 2, of the ICBN.

***Dictyopteris repens* (Okamura) Børgesen**

Haliseris repens Okamura, 1916:8, fig. 3, pl. I: figs. 7–18 [type locality: Truk Is., Caroline Is.].

Dictyopteris repens (Okamura) Børgesen, 1924:265.—Trono, 1973a:129, fig. 3; 1974a:146.—Cordero, 1976c:9, 10, 16, figs. L,M.—Trono, 1978:9.—Saraya and Trono, 1980:26, pl. VII: fig. 4.—Marcos-Agngarayngay, 1984a:5, fig. 4.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Sorsogon. **MARINDUQUE.** SULU: Sulu (Siasi I.).

***Dictyopteris undulata* Holmes**

Dictyopteris undulata Holmes, 1896:251, pl. VIII: fig. 1 [type locality: Misaki, Kanagawa Prefecture, Japan].—Flores-Sian, 1959:97.—Domanay, 1962:282.—Manapat, 1969:37.—Velasquez, Trono, and Doty, 1975:140.—Cordero, 1976c:18.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan.

***Dictyota* Lamouroux**

***Dictyota bartayresiana* Lamouroux**

Dictyota bartayresiana Lamouroux, 1809a:43 [type locality: Antilles].

Dictyota bartayresii Lamouroux, 1809b:331.—Taylor, 1966b:354.—Westernhagen, 1973a:65.—Trono, 1974a:143.—Westernhagen, 1974:113 (table I).—Trono, 1976:216.—Garcia, 1979:44 (table I).—Liao and Sotto, 1980:97.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon. **MINDORO:** Oriental Mindoro. **CEBU** (Mactan I.). **MINDANAO.** PALAWAN (Balabac I.). SULU: Sulu (Siasi I.), Tawitawi (Turtle Is.).

NOTE.—Lamouroux's change of epithet from *bartayresiana* to *bartayresii* was unwarranted. Collins and Hervey (1917:90, footnote) erred in believing that Lamouroux's paper in Desvaux's *Journal de Botanique* appeared after his paper in the *Nouveau Bulletin des Sciences*. The respective

dates of publication were April 1809 (see Stafleu, 1967:105) and May 1809, respectively.

***Dictyota bartayresiana* Lamouroux var. *denticulata* Kützing**

Dictyota bartayresiana Lamouroux var. *denticulata* Kützing, 1859:8, pl. 16: fig. II [type locality: Ilhas do Cabo Verde].—Weber-van Bosse, 1913a:183, pl. III: fig. 4.—Velasquez, Trono, and Doty, 1975:141 [without designation of variety].

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Jolo I.).

NOTE.—*Dictyota bartayresiana* var. *denticulata*, which Kützing illustrated using material from the Cape Verde Is. but did not describe, was validated by the citation of *D. crenulata* J. Agardh (1847:7, type locality: "St. Augustin" [Oaxaca, Mexico]) as a synonym. J. Agardh (1882:99), however, doubted that Kützing's plant was conspecific with *D. crenulata*. Moreover, *D. crenulata* is recognized as a species of *Dilophus* by Nizamuddin and Gerloff (1980:867), so that the identity of Weber-van Bosse's material is very much in doubt.

****Dictyota bidentata* Harvey and Bailey**

Dictyota bidentata Harvey and Bailey, 1851:373 [type locality: Mindanao].—Bailey and Harvey, 1862:173, pl. VIII: figs. 6, 7.—Velasquez, Trono, and Doty, 1975:141.

PHILIPPINE DISTRIBUTION.—As above.

***Dictyota cervicornis* Kützing**

Dictyota cervicornis Kützing, 1859:11, pl. 24: fig. II [type locality: Key West, Florida, USA].—Meñez, 1961:63, pl. 12: fig. 133.—Taylor, 1966b:354.—Manapat, 1969:38.—Reyes, 1972:145.—Cordero, 1973b:23.—Velasquez et al., 1973:19, pl. 6: fig. 30.—Ortega, Alcalá, and Reyes, 1974:187, 188.—Velasquez, Trono, and Doty, 1975:141.—Puig and Cordero, 1979:30.—Reyes, 1980:119, pl. 1: fig. 4.—Saraya and Trono, 1980:27, pl. VIII: fig. 2.—Chan, 1981:387.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Bataan, Batangas, Quezon. **LEYTE** (Biliran I.). **NEGROS:** Negros Oriental. **SIQUIJOR.** PALAWAN (Balabac I.).

***Dictyota ceylanica* Kützing**

Dictyota ceylanica Kützing, 1859:11, pl. 25: fig. I [type locality: Sri Lanka].—Martens, 1868:26, 80–81.—Velasquez, Trono, and Doty, 1975:141.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

***Dictyota ciliolata* Kützing**

Dictyota ciliolata Kützing, 1859:12, pl. 27: fig. I [type locality: La Guaira, Venezuela].—Garcia, 1979:44 (table I).—Saraya and Trono, 1980:29, pl. VIII: fig. 3.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MIN-DANAO.

***Dictyota dichotoma* (Hudson) Lamouroux**

Ulva dichotoma Hudson, 1762:476 [type locality: Walney I., Lancashire, England].

Dictyota dichotoma (Hudson) Lamouroux, 1809a:42.—Dickie, 1876a:243.—De Toni, 1895b:263.—Howe, 1932:170.—Meñez, 1961:62, pl. 12: fig. 136.—Agor, 1962:34.—Domantay, 1962:283.—Taylor, 1966b:355.—Manapat, 1969:37, 38.—Velasquez, 1971:441, fig. 19.—Reyes, 1972:145.—Cordero, 1973b:22.—Trono, 1973d:11, pl. 8: fig. 30.—Velasquez et al., 1973:18, pl. 6: fig. 29.—Ortega, Alcala, and Reyes, 1974:186, 187.—Trono, 1974a:142.—Velasquez, Trono, and Doty, 1975:141.—Trono and Young, 1977:58.—Trono and Tuason, 1978:11.—Vannajan and Trono, 1978:9, fig. 4.—Cordero, 1979b:276, 284.—Puig and Cordero, 1979:30.—Liao and Sotto, 1980:97.—Reyes, 1980:119, pl. 1: fig. 3.—Saraya and Trono, 1980:28, pl. VIII: fig. 1.—Meñez and Calumpung, 1981:382.—Hurtado-Ponce, 1983:120.—Cordero, 1984a:82; 1984b:61; 1984c:52.—Marcos-Anggarayngay, 1984a:3, fig. 2.

Dictyota volubilis Kützinger, 1849:554 [type locality: Arromanches-les-Bains, Calvados, France].—Westernhagen, 1973a:66; 1974:113 (table I).

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Bataan, Cavite, Batangas, Quezon, Albay. CATANDUANES. MINDORO: Oriental Mindoro. MASBATE. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Occidental, Negros Oriental. CEBU (Mactan I.). SIQUIJOR. MINDANAO: Zamboanga. PALAWAN (incl. Balabac I.). SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—The synonymy was proposed by J. Agardh (1882:92).

***Dictyota divaricata* Lamouroux**

Dictyota divaricata Lamouroux, 1809a:43 [type locality: Mediterranean France].—Domantay, 1962:283.—Manapat, 1969:37, 38.—Trono, 1972a:100.—Velasquez et al., 1973:19, pl. 7: fig. 31.—Westernhagen, 1973a:66.—Trono, 1974a:142.—Westernhagen, 1974:113 (table I).—Velasquez, Trono, and Doty, 1975:141.—Trono, 1978:10.—Cordero, 1979b:276.—Fortes and Trono, 1980:66.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:28, pl. VII: fig. 2.—Fortes, 1981b:396.—Trono and De Lara, 1981:8, pl. V: figs. 1, 2.—Trono and Ang, 1982:13.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas, Quezon. MINDORO: Occidental Mindoro (Lubang Is.). MARINDUQUE. PANAY: Aklan. CEBU (Mactan I.). PALAWAN (Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi.

***Dictyota friabilis* Setchell**

Dictyota friabilis Setchell, 1926:91, pl. 13: figs. 4–7 [type locality: Tafua Point, Tahiti].—Trono, 1974a:144; 1976:216.—Trono and Young, 1977:58.—Trono and Tuason, 1978:12.—Saraya and Trono, 1980:28.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Sorsogon. CATANDUANES. SULU: Sulu (Siasi I.).

***Dictyota indica* Sonder ex Kützinger**

Dictyota indica Sonder ex Kützinger, 1859:8, pl. 17: fig. 1 [type locality: La Habana, Cuba].—Meñez, 1961:62.—Velasquez, Trono, and Doty, 1975:141.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Dictyota lata* Lamouroux**

Dictyota lata Lamouroux, 1809a:43 [type locality: "Ind. orient." (Malagasy Republic)].—Martens, 1868:80–81.—Dickie, 1876a:244.—De Toni, 1895b:281.—Velasquez, Trono, and Doty, 1975:141.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

***Dictyota linearis* (C. Agardh) Greville**

Zonaria linearis C. Agardh, 1820b:134 [syntype localities: Cádiz, Spain; "ad oras Americae"].

Dictyota linearis (C. Agardh) Greville, 1830:xlili.—Montagne, 1844a:660.—Martens, 1868:80–81.—Domantay, 1962:283.—Taylor, 1966b:355.—Cordero, 1973b:23.—Velasquez, Trono, and Doty, 1975:141.—Cordero, 1976c:10, 16, figs. J,K; 1979b:276, 285.—Puig and Cordero, 1979:30.—Saraya and Trono, 1980:29, pl. VIII: fig. 4.—Meñez and Calumpung, 1981:382.—Cordero, 1984a:83; 1984b:61.—Marcos-Anggarayngay, 1984a:5, fig. 3.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan. LEYTE (Biliran I.). PANAY: Aklan. CENTRAL VISAYAS. PALAWAN. SULU: Tawitawi (Turtle Is.).

***Dictyota major* W.R. Taylor**

Dictyota major W.R. Taylor, 1945:88, pls. 8, 9 [type locality: Isla Santa Maria, Galápagos].—Saraya and Trono, 1980:29, pl. VIII: fig. 4.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Dictyota mertensii* (Martius) Kützinger**

Ulva mertensii Martius, 1828:5, pl. I [type locality: Salvador, Brazil].

Dictyota mertensii (Martius) Kützinger, 1859:15.

Dictyota dentata [misapplied name].—Vannajan and Trono, 1978:9, fig. 5.—Saraya and Trono, 1980:27.—Trono and Ganzon-Fortes, 1980:39, fig. [s.n.].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Cavite, Batangas.

NOTE.—*Dictyota dentata* Lamouroux (1809a:42), the name usually applied to this species, is illegitimate because Lamouroux cited *Fucus atomarius* S.G. Gmelin (1768:125, pl. X: fig. 1) as a synonym and therefore should have retained the epithet *atomaria*. This epithet cannot be reinstated now, however, because two other species have subsequently been given the name *Dictyota atomaria*. Moreover, Lamouroux erred in his taxonomic opinion, since *Fucus atomarius* is representative of the red algal genus *Odonthalia* (see Papenfuss, 1950:189). The conspecificity of *D. dentata*

sensu J. Agardh and *D. mertensii* was proposed by Hauck (1888:466).

Dictyota patens J. Agardh

Dictyota patens J. Agardh, 1882:93 [syntype localities: St. Thomas, Virgin Is.; Tonga].—Trono, 1974a:143.—Puig and Cordero, 1979:31.

PHILIPPINE DISTRIBUTION.—LEYTE (Biliran I.). SULU: Sulu (Siasi I.).

Dilophus J. Agardh

Dilophus okamurai Dawson

Dictyota marginata Okamura, 1913 [1913–1915]:33, pl. CVIII: fig. 9; pl. CI [syntype localities: various, all in Japan].—Cordero, 1973b:24 [*D. marginata* prox.].—Puig and Cordero, 1979:31.
Dilophus marginatus (Okamura) Okamura, 1915 [1913–1915]:154 [replaced name].
Dilophus okamurai Dawson, 1950a:86 [*“okamurai”*].

PHILIPPINE DISTRIBUTION.—LEYTE (Biliran I.).
NOTE.—*Dilophus okamurai* is a substitute name for *D. marginatus* (Okamura) Okamura, a later homonym of *D. marginatus* J. Agardh (1894:91).

Lobophora J. Agardh

Lobophora variegata (Lamouroux) Womersley

Dictyota variegata Lamouroux, 1809a:40 [type locality: Antilles].
Zonaria variegata (Lamouroux) C. Agardh, 1817:xx.—Dickie, 1876a: 245.—Weber-van Bosse, 1913a:175.—Meñez, 1961:61, pl. 12: fig. 135.—Velasquez, Trono, and Doty, 1975:169.—Liao and Sotto, 1980:97.
Gymnosorus variegatus (Lamouroux) J. Agardh, 1894:11.—De Toni, 1895b:227.
Pocockiella variegata (Lamouroux) Papenfuss, 1943b:467.—Domantay, 1962:284.—Taylor, 1966b:357.—Trono, 1972a:100; 1973d:11.—Velasquez et al., 1973:19, pl. 7: fig. 32.—Trono and Santos-Maranan, 1974b:3, figs. 2, 3.—Velasquez, Trono, and Doty, 1975:160.—Reyes, 1980:120, pl. 2: fig. 3.—Cordero, 1984b:62.
Lobophora variegata (Lamouroux) Womersley, 1967:221.—Trono, 1978:10.—Vannajan and Trono, 1978:13, figs. 10, 13.—Fortes and Trono, 1980:60, 66.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:31, pl. IX: fig. 1.—Chan, 1981:387.—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Bataan, Cavite, Batangas. MINDORO: Oriental Mindoro. MARINDUQUE. PANAY: Iloilo (Gigantes Is.). CEBU (Mactan I.). SIQUIJOR. PALAWAN (Balabac I.). SULU: Sulu (North Ubian I.), Tawitawi.
NOTE.—Papenfuss (1980) has proposed the generic name *Pocockiella* Papenfuss (1943b:467) for conservation over the earlier taxonomic synonym *Lobophora* J. Agardh (1894:21). The latter name has come into wide use since its identity was clarified by Womersley (1967:221), however, so there seems to be little or no merit in conserving *Pocockiella*.

Padina Adanson

Padina arborescens Holmes

Padina arborescens Holmes, 1896:251, pl. 12: fig. 1 [type locality: Enoshima, Kanagawa Prefecture, Japan].—Agor, 1962:34.—Manapat, 1969:38.—Garcia, 1979:44 (table 1).

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDANAO. PALAWAN.

Padina australis Hauck

Padina australis Hauck, 1887 [1886–1887]:44 [type locality: Cape York, Queensland, Australia].—Merrill, 1918:40.—Howe, 1932:170.—Zaneveld, 1952:131.—Abelardo and De Leon, 1956:102.—Olea and De Leon, 1956:104.—Zaneveld, 1956:17; 1959:100.—Domantay, 1962:283.—Taylor, 1966b:355.—Manapat, 1969:37, 38.—Reyes, 1972:145.—Trono, 1973d:11, pl. 8: fig. 29.—Ortega, Alcalá, and Reyes, 1974:185, 186, 187, 188.—Velasquez, Trono, and Doty, 1975:158.—Trono, 1976:215; 1978:10.—Reyes, 1980:120, pl. 1: fig. 5.—Saraya and Trono, 1980:29, pl. IX: fig. 3.—Trono and Fortes, 1980:66.—Trono and Ganzon-Fortes, 1980:41, fig. [s.n.].—Meñez and Calumpong, 1981:382.—Trono and De Lara, 1981:8, pl. V: fig. 4.—Laserna et al., 1982:52.—Trono and Ang, 1982:13.—Trono and Fortes, 1982:146.
Ulva umbilicalis [misapplied name fide Merrill, 1918:40].—M. Blanco, 1837:842; 1845:581; 1879:261.—Velasquez, Trono, and Doty, 1975:168.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, La Union, Pangasinan, Bataan, Batangas, Quezon, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. SAMAR: Eastern Samar. LEYTE. PANAY. NEGROS: Negros Occidental, Negros Oriental. SIQUIJOR. MINDANAO: Misamis Occidental. PALAWAN (incl. Balabac I., Bugsuk I.).
NOTE.—Martens (1868:47) identified Blanco’s plant as *Zonaria gymnospora* (= *Padina gymnospora*). In the absence of authentic specimens, no definitive placement can be made.

Padina boryana Thivy

Padina boryana Thivy in Taylor, 1966b:355, fig. 2 [including Philippine records] [type locality: Tonga].—Kraft, 1972:332.—Velasquez, Trono, and Doty, 1975:158.
Padina commersonii [misapplied name].—Domantay, 1962:284.—Velasquez, Trono, and Doty, 1975:158.—Cordero, 1976c:6, 19.—Puig and Cordero, 1979:32.—Trono and Fortes, 1980:66.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:146.
Padina tenuis [misapplied name].—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Pangasinan, Quezon (incl. Polillo Is.). CATANDUANES. LEYTE (Biliran I.). PANAY: Antique. CENTRAL VISAYAS. PALAWAN (Balabac I.). SULU: Sulu.
NOTE.—*Padina commersonii* Bory de Saint-Vincent (1828 [1826–1829]:144), a name that traditionally has been applied to the present species, is an illegitimate substitute for

P. tenuis (C. Agardh) Bory de Saint-Vincent (1827:590), whose basionym, *Zonaria pavonia* var. *tenuis* C. Agardh (1824:264), has been shown by Papenfuss (1977:277) to be referable to *Lobophora variegata*. The material that Bory de Saint-Vincent had in hand was incorporated in a new species, *P. boryana*, by Thivy.

Padina crassa Yamada

Padina crassa Yamada, 1931a:67, pl. XVII: fig. 2 [syntype localities: various, all in Japan].—Manapat, 1969:37, 38.—Velasquez, 1971:441, fig. 20.—Cordero, 1973b:24.—Velasquez et al., 1973:19, pl. 7: fig. 33.—Cordero, 1979b:276, 284.—Puig and Cordero, 1979:31.—Hurtado-Ponce, 1983:120.—Cordero, 1984a:83; 1984b:61; 1984c:52.—Marcos-Angarayngay, 1984a:3, fig. 1.—Tungpalan, 1984:142.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Bataan, Batangas, Quezon. MASBATE. LEYTE (Biliran I.). PANAY: Aklan. CEBU. PALAWAN.

Padina distromatica Hauck

Padina distromatica Hauck, 1887 [1886–1887]:43 [type locality: Meith (Maidh), Somalia].—Howe, 1932:169.—Taylor, 1966b:356.—Velasquez, Trono, and Doty, 1975:158.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro. PANAY. BOHOL.

Padina fraseri (Greville) Greville

Zonaria fraseri Greville, 1829:423, pl. XXVI: fig. 2 [type locality: "ad Novam Hollandiam" (probably near Fremantle, Western Australia, Australia fide Womersley, 1967:222)].

Padina fraseri (Greville) Greville, 1830:xliv.—Taylor, 1966b:356.—Velasquez, Trono, and Doty, 1975:159.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Sur, La Union.

Padina gymnospora (Kützinger) Sonder

Zonaria gymnospora Kützinger, 1859:29, pl. 71: fig. II [type locality: St. Thomas, Virgin Is.].—Martens, 1868:26, 47, 82–83.

Padina gymnospora (Kützinger) Sonder, 1871:47.—Taylor, 1966b:356.—Velasquez, Trono, and Doty, 1975:159.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon. CENTRAL VISAYAS. MINDANAO: Zamboanga.

Padina japonica Yamada

Padina japonica Yamada, 1931a:69, pl. XIX: fig. 2 [syntype localities: various, all in Japan].—Domantay, 1962:284.—Taylor, 1966b:356.—Manapat, 1969:37.—Cornejo and Velasquez, 1972:174, 179, 180, 181.—Kraft, 1972:332.—Trono, 1972a:100.—Velasquez et al., 1973:20, pl. 7: fig. 34.—Velasquez, Trono, and Doty, 1975:159.—Trono, 1976:215.—Trono and Young, 1977:58.—Trono, 1978:11.—Cordero, 1979b:276.—Liao and Sotto, 1980:97.—Saraya and Trono,

1980:30, pl. IX: fig. 2.—Trono and Fortes, 1980:66; 1982:146.—Hurtado-Ponce, 1983:121.—Cordero, 1984c:52.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Bataan, Batangas, Quezon, Camarines Sur, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.). MARINDUQUE. MASBATE. PANAY: Aklan. CEBU (Mactan I.). SULU: Tawitawi.

Padina minor Yamada

Padina minor Yamada, 1925b:251, fig. V [type locality: Garan-Bi (O-luan), Taiwan].—Manapat, 1969:37, 38.—Cornejo and Velasquez, 1972:175, 176, 182.—Trono, 1973d:12, pl. 6: fig. 21.—Velasquez et al., 1973:20, pl. 7: fig. 35.—Trono, 1974a:141; 1976:214; 1978:11.—Trono and Tuason, 1978:12.—Puig and Cordero, 1979:31.—Liao and Sotto, 1980:97.—Reyes, 1980:120, pl. 2: fig. 1.—Saraya and Trono, 1980:30.—Trono and Fortes, 1980:66.—Trono and Ganzon-Fortes, 1980:43, fig. [s.n.].—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:8, pl. V: fig. 3.—Trono and Fortes, 1982:146.—Hurtado-Ponce, 1983:121.—Cordero, 1984c:52.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan, Bataan, Batangas, Quezon, Sorsogon. CATANDUANES. MARINDUQUE. MASBATE. LEYTE (Biliran I.). CEBU (Mactan I.). SIQUIJOR. SULU: Sulu (Siasi I.).

Padina pavonica (Linnaeus) Thivy

Fucus pavonicus Linnaeus, 1753:1162 [type locality: "In Mari Europae australis"].

Fucus pavonius Linnaeus, 1759:1345.

Padina pavonia (Linnaeus) Lamouroux, 1816:304.—Bailey and Harvey, 1862:173.—Dickie, 1876a:243.—Meñez, 1961:61, pl. 10: figs. 113–117; pl. 11: figs. 118–120.—Velasquez, Trono, and Doty, 1975:159.

Padina pavonica (Linnaeus) Thivy in Taylor, 1960:234.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CEBU (Mactan I.). MINDANAO: Zamboanga.

NOTE.—We consider *Fucus pavonius* Linnaeus, the basionym of *Padina pavonia*, an illegitimate substitute for *F. pavonicus*. Some authors, however, consider the two epithets orthographic variants and hence accredit the binomial *P. pavonica* to (Linnaeus) Lamouroux (see Price, Tittley, and Richardson, 1979:3, footnote).

Padina sanctae-crucis Børgesen

Padina sanctae-crucis Børgesen, 1914b:45, figs. 27, 28 [type locality: St. Croix, Virgin Is.].—Meñez, 1961:62, pl. 10: figs. 109–112.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—According to Taylor (1960:237), *Dictyerpa jamaicensis* Collins (1901:251; type locality: Manchioneal, Jamaica) "is a growth stage of a *Padina*, perhaps of various species, but certainly of this one" (*Padina sanctae-crucis*). On the basis of this statement, Papenfuss (1977:272) made the combination *P. jamaicensis* (Collins) Papenfuss. We prefer to retain Børgesen's name, however, because of the

uncertainty as to which species is represented by the type material of *D. jamaicensis*.

***Padina tetrastromatica* Hauck**

Padina tetrastromatica Hauck, 1887 [1886–1887]:43 [type locality: Meith (Maidh), Somalia].—Taylor, 1966b:356.—Velasquez, Trono, and Doty, 1975:159.—Vannajan and Trono, 1978:10, figs. 6–8.—Trono and Fortes, 1980:66.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:146.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan, Rizal, Manila, Cavite.

***Spatoglossum* Kützing**

***Spatoglossum asperum* J. Agardh**

Spatoglossum asperum J. Agardh, 1894:36 [type locality: Sri Lanka].—Trono, 1974a:144.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Siasi I.).

***Spatoglossum variabile* Figari and De Notaris**

Spatoglossum variabile Figari and De Notaris, 1853:153, fig. IV [syntype localities: Suez, Egypt and Aqaba, Jordan, Red Sea].—Weber-van Bosse, 1913a:181.—Velasquez, Trono, and Doty, 1975:163.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

***Styopodium* (Kützing) J. Agardh**

****Styopodium flabelliforme* Weber-van Bosse**

Styopodium flabelliforme Weber-van Bosse, 1913a:176, pl. II: fig. 10; pl. III: fig. 2 [syntype localities: Rotti I., Indonesia; Pearl Bank, Tawitawi Prov., Sulu Archipelago].—Domantay, 1962:287.—Velasquez, Trono, and Doty, 1975:164.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. SULU: Tawitawi (Pearl Bank).

***Zonaria* C. Agardh**

***Zonaria diesingiana* J. Agardh**

Zonaria diesingiana J. Agardh, 1841:443 [type locality: "Nov. Holl." (probably near Sydney, Australia fide Allender and Kraft, 1983:81)].—Cordero, 1976c:6, 10, 18.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—Womersley (1967:228) rejected this name as a nomen dubium on the grounds that the type specimen (from Australia) represents the basal portion of an undeterminable *Zonaria*.

***Zonaria flabellata* (Okamura) Papenfuss**

Homoeostrichus flabellatus Okamura, 1931 [1929–1932]:57, pl. CCLXXXIX: figs. 11–13 [syntype localities: Ryukyu-retto and Seto, Wakayama Prefecture, Japan].—Flores-Sian, 1959:97.

Zonaria flabellata (Okamura) Papenfuss, 1944:341.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Order CHORDARIALES

Family CORYNOPHLAEACEAE

***Leathesia* S.F. Gray**

***Leathesia difformis* (Linnaeus) J.E. Areschoug**

Tremella difformis Linnaeus, 1755:429 [type locality: Sweden].

Leathesia difformis (Linnaeus) J.E. Areschoug, 1847:376.—Domantay, 1962:283.—Cordero, 1973b:24.—Velasquez, Trono, and Doty, 1975:151.—Marcos-Angarayngay, 1984a:7, fig. 5.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan. LEYTE (Biliran I.).

Order DICTYOSIPHONALES

Family CHNOOSPORACEAE

***Chnoospora* J. Agardh**

***Chnoospora implexa* J. Agardh**

Chnoospora implexa J. Agardh, 1848:172 [type locality: Tor, Sinai Peninsula, Egypt].—Meñez, 1961:60, pl. 12: figs. 129–131.—Reyes, 1972:148.—Velasquez et al., 1973:21, pl. 8: fig. 38.—Trono and Santos-Maranan, 1974b:4, fig. 4.—Velasquez, Trono, and Doty, 1975:135.—Trono, 1976:217.—Liao and Sotto, 1980:98.—Reyes, 1980:122, pl. 3: fig. 4.—Meñez and Calumpung, 1981:382.—Cordero, 1982b:32.—Hurtado-Ponce, 1983:122.—Hurtado-Ponce, 1984:179.—Tungpalan, 1984:139.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Bataan, Sorsogon. MINDORO: Oriental Mindoro. SAMAR: Eastern Samar. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUJOR.

***Chnoospora minima* (Hering) Papenfuss**

Fucus minimus Hering, 1841:92 [type locality: "Port Natal" (Durban), South Africa].

Chnoospora minima (Hering) Papenfuss, 1956:69.—Taylor, 1966b:357.—Cordero, 1982b:32, fig. 1.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. SAMAR: Eastern Samar.

***Chnoospora pannosa* J. Agardh**

Chnoospora pannosa J. Agardh, 1848:172 [type locality: Oahu, Hawaiian Is.].—Martens, 1868:26, 70–71.—Velasquez, Trono, and Doty, 1975:135.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

Order SCYTOSIPHONALES**Family SCYTOSIPHONACEAE*****Colpomenia* (Endlicher) Derbès and Solier*****Colpomenia sinuosa* (Mertens ex Roth) Derbès and Solier**

Ulva sinuosa Mertens ex Roth, 1806:327, pl. 12 [type locality: Cádiz, Spain].

Colpomenia sinuosa (Mertens ex Roth) Derbès and Solier in Castagne, 1851:95.—Velasquez, 1949:155 [*"sinuata"*].—Meñez, 1961:60, pl. 12: fig. 134.—Agor, 1962:34.—Domantay, 1962:282.—Galutira and Velasquez, 1964:500.—Velasquez, 1971:441, fig. 22.—Reyes, 1972:148.—Trono, 1973d:12.—Velasquez et al., 1973:20, pl. 7: fig. 36.—Westernhagen, 1973a:65.—Ortega, Alcalá, and Reyes, 1974:186, 187.—Trono and Santos-Maranan, 1974b:4, figs. 5, 6.—Westernhagen, 1974:113 (table I).—Velasquez, Trono, and Doty, 1975:138 [*"sinuosa"* and *"sinuata"*].—Cordero, 1979b:285.—Puig and Cordero, 1979:34.—Cordero, 1980b:34, pl. [50].—Reyes, 1980:121, pl. 3: fig. 1.—Saraya and Trono, 1980:31, pl. IX: fig. 4.—Chan, 1981:387.—Meñez and Calumpong, 1981:382.—Hurtado-Ponce, 1983:122.—Cordero, 1984a:84.—Hurtado-Ponce, 1984:179.—Marcos-Angarayngay, 1984a:9, fig. 7.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Bataan, Batangas. MINDORO: Oriental Mindoro. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR.

Hydroclathrus* Bory**Hydroclathrus clathratus* (C. Agardh) Howe**

Encoelium clathratum C. Agardh, 1822a:412 [type locality: uncertain].—Martens, 1868:47, 70–71.—Velasquez, Trono, and Doty, 1975:141.

Hydroclathrus clathratus (C. Agardh) Howe, 1920:590.—Zaneveld, 1952:130; 1956:15; 1959:99.—Agor, 1962:34.—Domantay, 1962:283.—Galutira and Velasquez, 1964:500, pl. 2: fig. 7; pl. 7: fig. 26.—Taylor, 1966b:357.—Velasquez, 1968a:120, fig. 5.—Villones and Magdamo, 1968:26, fig. 18 [figure cited but not published].—Manapat, 1969:37, 38, 39.—Velasquez, 1971:441, fig. 21.—Reyes, 1972:148.—Velasquez, 1972:63.—Bersamin et al., 1973:187.—Trono, 1973d:12.—Velasquez et al., 1973:21, pl. 8: fig. 37.—Westernhagen, 1973a:66.—Trono, 1974a:147.—Trono and Santos-Maranan, 1974b:2, fig. 1.—Westernhagen, 1974:113 (table I).—Velasquez, Trono, and Doty, 1975:150.—Trono, 1976:216.—Cordero, 1979b:276, 285.—Puig and Cordero, 1979:34.—Velasquez, 1979b:230.—Cordero, 1980b:33, pl. 21.—Liao and Sotto, 1980:97.—Moreland, 1980:43, 46, 47.—Reyes, 1980:121, pl. 3: figs. 2a,b.—Saraya and Trono, 1980:32.—Trono and Fortes, 1980:66.—Trono and Ganzon-Fortes, 1980:45, fig. [s.n.].—Trono, Velasquez, and Guevarra, 1980:77.—Ganzon-Fortes, 1981:21.—Guzman, 1981:43, 49.—Meñez and Calumpong, 1981:382.—Laserna et al., 1981:447.—Trono and De

Lara, 1981:9, pl. VI: fig. 4.—Calumpong, 1982:145.—Cordero, 1982a:60.—Trono and Ang, 1982:14.—Trono and Fortes, 1982:147.—Cordero, 1984a:85.—Hurtado-Ponce, 1983:122.—Cordero, 1984b:62; 1984c:53.—Hurtado-Ponce, 1984:179.—Marcos-Angarayngay, 1984a:7, fig. 6; 1984b:122.—Tungpalan, 1984:139.—Ang, 1985b:298.

Hydroclathrus cancellatus Bory de Saint-Vincent, 1825:419.—Weber-van Bosse, 1913a:136.—Merrill, 1918:40.—Collado, 1926:129.—G. Blanco, 1938:513.—Velasquez, 1949:155.—Quisumbing, 1951:1010.—Velasquez, 1953b:206.—Montilla and Blanco, 1953:166, fig. 5:4.—Meñez, 1961:60.—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Cordero, 1973b:25.—Westernhagen, 1973a:66; 1974:113 (table I).—Velasquez, Trono, and Doty, 1975:150.

Ulva reticulata [misapplied name fide Martens, 1868:47 and Collins in Merrill, 1918:40].—M. Blanco, 1837:842; 1845:582; 1879:262.—Martens, 1868:60–61 [Blanco record only].—Velasquez, Trono, and Doty, 1975:167 [Blanco and Martens records only].

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Ilocos Sur, La Union, Pangasinan, Bataan, Batangas, Quezon, Albay, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MASBATE. SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental (incl. Apo I.). CEBU (incl. Mactan I.). SIKUIJOR. MINDANAO: Zamboanga, Davao. PALAWAN (incl. Balabac I., Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—*Encoelium clathratum* C. Agardh (based on *Fucus clathratus* Bory de Saint-Vincent mscr.) and *Hydroclathrus cancellatus* Bory de Saint-Vincent share the same type collection. The provenance was stated to be Belle-Ile (Atlantic France), but Hamel (1937:202) explained how this was shown to be in error. The true provenance is unknown.

Rosenvingea* Børghesen**Rosenvingea intricata* (J. Agardh) Børghesen**

Asperococcus intricatus J. Agardh, 1847:7 [type locality: Veracruz, Mexico].

Rosenvingea intricata (J. Agardh) Børghesen, 1914b:26.—Reyes, 1972:148.—Velasquez, Trono, and Doty, 1975:162.—Reyes, 1980:121, pl. 3: fig. 3.—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental. SIKUIJOR.

****Rosenvingea orientalis* (J. Agardh) Børghesen**

Asperococcus orientalis J. Agardh, 1848:78 [type locality: Manila, Luzon].—De Toni, 1895b:495.

Encoelium orientale (J. Agardh) Kützinger, 1849:551.—Martens, 1868:68–69.—Velasquez, Trono, and Doty, 1975:142.

Hydroclathrus orientalis (J. Agardh) Heydrich, 1894:286 [including Philippine record].—Velasquez, Trono, and Doty, 1975:150.

Rosenvingea orientalis (J. Agardh) Børghesen, 1914b:26.—Saraya and Trono, 1980:32, pl. X: fig. 2.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Manila.

Order FUCALES

Family CYSTOSEIRACEAE

Cystoseira C. Agardh*Cystoseira hakodatensis* (Yendo) Fensholt

Cystophyllum hakodatense Yendo, 1907:32, pl. II: figs. 13–16 [lectotype locality: Shoya, Japan fide Yoshida, 1980:100].—Cordero, 1982b:33, fig. 2 [*"Cestophyllum"*].

Cystoseira hakodatensis (Yendo) Fensholt, 1952:563 [*"hakodatense"*].

PHILIPPINE DISTRIBUTION.—LEYTE (Leyte del Sur).

NOTE.—The name *Cystophyllum* J. Agardh (1848:228) was superfluous when published inasmuch as the circumscription of the genus included both of the original species of *Myagropsis* Kützing (1843a:57), the single original species of *Sirophysalis* Kützing (1843b:368), as well as several species previously assigned to *Sargassum* C. Agardh (1820b:1) and *Cystoseira* C. Agardh (1820b:50). According to Article 7.11 of the ICBN, the type of *Cystophyllum* is the type of *Myagropsis*, the earlier of the two Kützing generic names and therefore the one that J. Agardh should have adopted. *Fucus myagroides* Mertens ex Turner (1809:28, pl. 83) was designated lectotype of *Myagropsis* by Silva (1952a:279) and is thus the type of *Cystophyllum*. The lectotypification by De Toni (1891:175), who chose *C. trinode* (Forsskål) J. Agardh (1848:230), is irrelevant.

J. Agardh separated *Cystophyllum* from *Cystoseira* on the basis of vesicle position. In *Cystophyllum* the vesicles were said to be restricted to ultimate ramuli, while in *Cystoseira* they are produced within the axes. The diagnostic value of this character at the generic level was doubted by Gardner (1917:390), who found both conditions in the same species. Fensholt (1952) abandoned this distinction and treated as members of *Cystoseira* most species that had been placed in *Cystophyllum* by J. Agardh and subsequent authors. If *Cystoseira hakodatensis* and other species currently placed in *Cystophyllum* are segregated from *Cystoseira*, the segregate genus cannot bear the name *Cystophyllum*, which, as shown above, is a synonym of *Myagropsis*.

Hormophysa Kützing*Hormophysa cuneiformis* (J.F. Gmelin) P.C. Silva, new combination

Fucus triqueter Linnaeus, 1771:312 [type locality: "in Mari Capensi"].

Cystoseira triquetra C. Agardh, 1820b:61.

Hormophysa triquetra (C. Agardh) Kützing, 1843b:359.—Taylor, 1966b:357.—Papenfuss, 1968:45.—Cornejo and Velasquez, 1972:179, 182.—Trono, 1972a:102.—Cordero, 1973b:25.—Velasquez et al., 1973:21, pl. 8: fig. 39.—Ortega, Alcalá, and Reyes, 1974:187.—Trono, 1974a:147.—Velasquez, Trono, and Doty, 1975:150.—Trono, 1976:220.—Cordero, 1976c:20.—Trono, 1978:11.—Cordero, 1979b:286.—Puig and Cordero, 1979:32.—Liao and Sotto, 1980:98.—Reyes, 1980:123, pl. 3: fig. 5.—Saraya and Trono, 1980:33, pl. X: fig. 3.—Trono and Ganzon-Fortes, 1980:47, fig. [s.n.].—Guz-

man, 1981:43.—Laserna et al., 1981:447.—Meñez and Calumpo, 1981:382.—Laserna et al., 1982:52.—Trono and Ang, 1982:14.—Hurtado-Ponce, 1983:123.—Marcos-Angarayngay, 1984a:11, fig. 8.—Marcos-Angarayngay, 1984b:123.—Tungpalan, 1984:143.

Fucus articulatus Forsskål, 1775:191 [type locality: Suez, Egypt].

Cystoseira articulata J. Agardh, 1848:216.—Meñez, 1961:68.—Velasquez, Trono, and Doty, 1975:140.

Fucus cuneiformis J.F. Gmelin, 1792:1389.

Cystoseira prolifera J. Agardh, 1848:215 [type locality: Western Australia, Australia].—Westernhagen, 1973a:65; 1974:113 (table I).

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, La Union, Bataan, Batangas, Sorsogon. MARINDUQUE. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR. PALAWAN (Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—*Cystoseira articulata* is included as a synonym on the authority of Setchell (1935:264), *C. prolifera* on the authority of Womersley (1964:64). Various taxonomic synonyms are discussed by Papenfuss (1968), while the tortuous nomenclature is brought up to date in the appended Nomenclatural Notes.

Myagropsis Kützing*Myagropsis myagroides* (Mertens ex Turner) Fensholt

Fucus myagroides Mertens ex Turner, 1809:28, pl. 83 [type locality: Nagasaki, Japan].

Myagropsis myagroides (Mertens ex Turner) Fensholt, 1955:319.

Fucus sisymbrioides Turner, 1809:150, pl. 129 [type locality: Korea Strait].

Cystophyllum sisymbrioides (Turner) J. Agardh, 1848:234.—Cordero, 1982b:35, fig. 3 [*"Cestophyllum"*].

PHILIPPINE DISTRIBUTION.—SIKUIJOR.

NOTE.—While returning most members of *Cystophyllum* to *Cystoseira*, Fensholt (1952) retained the name *Cystophyllum* for a new generic concept distinguished from *Cystoseira* by a suite of developmental and cytological characters. Only two species were known by Fensholt to share these characters, namely, *C. sisymbrioides* (Turner) J. Agardh (1848:234) and *C. turneri* Yendo (1907:40, pl. III: figs. 7–11). Upon realizing that *C. sisymbrioides* included both of the original species of *Myagropsis*, Fensholt (1955) adopted that generic name for what she had previously designated *Cystophyllum* J. Agardh emend. Fensholt. Papenfuss and Jensen (1967) reviewed Fensholt's work and concluded that the segregation of *Myagropsis* from *Cystoseira* was advantageous.

The conspecificity of *Fucus myagroides* and *F. sisymbrioides* was proposed by J. Agardh (1848:234). Both species were originally described in the second volume of Turner's "Fuci." If they had been published simultaneously, J. Agardh would have been free to adopt either epithet in preference to the other. Moreover, his choice (*sisymbrioides*) would have been imposed on subsequent workers (Article 57.2). In fact, however, the two species were not published simultaneously. Turner's "Fuci" was issued serially, with 12 parts constituting a volume (see Price, 1984). Although

exact dates have not been ascertained, it is certain that pl. 83 (*F. myagroides*) appeared prior to pl. 129 (*F. sisymbrioides*). *Myagropsis myagroides* is thus the correct name for this species.

Family SARGASSACEAE

Sargassum C. Agardh

Sargassum aemulum Sonder

Sargassum aemulum Sonder, 1853:672 [type locality: Holdfast Bay (Gulf of St. Vincent), South Australia, Australia].

Sargassum cristatum J. Agardh, 1889:84, pl. XXV: figs. 18–20 [type locality: South Australia, Australia].—Taylor, 1966b:357.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—The synonymy was proposed by Grunow (1915 [1915–1916]:376).

Sargassum agardhianum Farlow ex J. Agardh

Sargassum agardhianum Farlow ex J. Agardh, 1889:93 [type locality: San Diego, California, USA].—Cordero, 1976c:22.

PHILIPPINE DISTRIBUTION.—BATANES.

Sargassum baccularia (Mertens) C. Agardh

Fucus baccularia Mertens, 1819:177 [type locality: not specified ("Ad Novam Hollandiam" fide C. Agardh, 1824:304)].

Sargassum baccularia (Mertens) C. Agardh, 1824:304.—Ang, 1985b:295.

PHILIPPINE DISTRIBUTION.—Batangas.

**Sargassum belangeri* Bory de Saint-Vincent

Sargassum belangeri Bory de Saint-Vincent, 1834:162 [syntype localities: Java and Sunda Strait, Indonesia; Philippines].—J. Agardh, 1848:345.—Martens, 1868:72–73.—De Toni, 1895b:113.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Sargassum berberifolium J. Agardh

Sargassum berberifolium J. Agardh, 1848:337 [syntype localities: Western Australia, Australia; Admiralty Is.].—Grunow, 1915 [1915–1916]:411.

PHILIPPINE DISTRIBUTION.—Locality not specified.

Sargassum biforme Sonder

Sargassum biforme Sonder, 1845:51 [type locality: Western Australia, Australia].—Dickie, 1876a:245.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—PANAY: Iloilo (Gigantes Is.).

Sargassum cervicorne Greville

Sargassum cervicorne Greville, 1849:217, pl. IX: figs. 1–6 [type locality: "in mare Peninsulae Indiae Orientalis"].

**Sargassum binderi* Sonder var. *angustifolium* Sonder, 1871:44 [syntype localities: various, Indian and Pacific oceans, including San Bernardino Strait, between Sorsogon and Northern Samar provinces, Philippines].

PHILIPPINE DISTRIBUTION.—San Bernardino Strait.

NOTE.—The synonymy was proposed by Grunow (1915 [1915–1916]:384).

**Sargassum cinctum* J. Agardh var. *gracilentum* Grunow

Sargassum cinctum J. Agardh var. *gracilentum* Grunow, 1915 [1915–1916]:419 ["*gracilenta*"] [syntype localities: Australia: Goodie I., Ballina, and Rockingham; near Manila, Luzon].

PHILIPPINE DISTRIBUTION.—LUZON: Manila.

**Sargassum cinctum* J. Agardh var.? *mixtum* Grunow

Sargassum cinctum J. Agardh var.? *mixtum* Grunow, 1915 [1915–1916]:419 ["*mixta*"] [type locality: near Manila, Luzon].

Sargassum siliquosum [misapplied name fide Grunow, l.c.].—Martens, 1868:27, 74–75.—Velasquez, Trono, and Doty, 1975:163 [Martens records only].

PHILIPPINE DISTRIBUTION.—LUZON: La Union, Manila. MINDANAO: Zamboanga.

NOTE.—In view of the fact that Grunow (1916 [1915–1916]:173) did not list the Philippines under *Sargassum siliquosum* J. Agardh, it appears that he intended to include in *S. cinctum* var. *mixtum* the Martens record of *S. siliquosum* from Zamboanga as well as the one from Manila, even though he cited only the latter locality.

Sargassum confusum C. Agardh

Sargassum confusum C. Agardh, 1824:301 [type locality: "In mari Japonico"].—Flores-Sian, 1959:97.—Agor, 1962:34.—Domantay, 1962:284.—Velasquez, Trono, and Doty, 1975:162.—Cordero, 1976c:8.—Garcia, 1979:44 (table 1).—Puig and Cordero, 1979:33.—Cordero, 1981c:408; 1982a:fig. 6; 1984c:53.—Marcos-Agngarayngay, 1984a:12, fig. 9; 1984b:123.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan. MASBATE. SAMAR: Western Samar, Eastern Samar. LEYTE (Biliran I.). PANAY: Antique, Iloilo. MINDANAO.

Sargassum crispifolium Yamada

Sargassum crispifolium Yamada, 1931a:72, pl. XX [syntype localities: various, all in Japan].—Velasquez, 1971:443, fig. 23.—Cordero, 1979b:276; 1981c:408.—Guzman, 1981:43, 50.—Cordero, 1982a:fig. 8; 1984b:63; 1984c:54.

PHILIPPINE DISTRIBUTION.—MASBATE. SAMAR: Western Samar, Eastern Samar. PANAY: Aklan, Antique. CEBU (Mac-tan I.). PALAWAN.

***Sargassum cristaefolium* C. Agardh**

Sargassum cristaefolium C. Agardh, 1820b:13 [type locality: "Locus natalis ignotus"].—Montagne, 1844a:660; 1846a:42.—Martens, 1868:26, 72–73.—De Toni, 1895b:51.—Velasquez, Trono, and Doty, 1975:162.—Trono, 1978:12.—Saraya and Trono, 1980:32.—Trono and Fortes, 1980:68.—Chan, 1981:385.—Ganzon-Fortes, 1981:21.—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:10, pl. VI: figs. 1, 2.—Trono and Ang, 1982:14.—Trono and Fortes, 1982:147.

Sargassum ilicifolium (Turner) C. Agardh var. *duplicatum* J. Agardh, 1848:318 [type locality: Moluccas, Indonesia].

Sargassum duplicatum (J. Agardh) J. Agardh, 1889:90.—Sulit and San Juan, 1955:48 (table 1).—Meñez, 1961:65.—Domantay, 1962:286.—Taylor, 1966b:357.—Manapat, 1969:37, 38, 39.—Trono, 1974a:147.—Velasquez, Trono, and Doty, 1975:162.—Trono, 1976:219.—Cordero, 1976c:22; 1979b:276, 286, fig. 3.—Puig and Cordero, 1979:33.—Cordero, 1980a:29, 36, fig. 4; 1980b:35, pl. 22.—Laserna et al., 1981:447.—Cordero, 1984a:85.—Marcos-Agngaray-ngay, 1984a:12, fig. 10.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Manila, Batangas, Quezon, Sorsogon. MARINDUQUE. MINDORO: Occidental Mindoro (incl. Lubang Is.). SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. SIQUIJOR. MINDANAO: Zamboanga del Sur, Surigao del Sur. SULU: Sulu (Siasi I.). PALAWAN (incl. Bugsuk I.).

NOTE.—J. Agardh (1848:318) was uncertain whether his plant from the Moluccas was conspecific with *Sargassum duplicatum* Bory de Saint-Vincent (1828 [1826–1829]:127; type locality: Pacific Ocean between Tahiti and New Zealand) and later (1889:90, 123) recognized his *S. duplicatum* as a species distinct from that of Bory de Saint-Vincent. Womersley and Bailey (1970:296) treated the two species as one entity, which they merged into *S. cristaefolium*.

TAXON OF UNCERTAIN VALUE

The following infraspecific taxon is probably related to *Sargassum cristaefolium* but has not formally been transferred to it.

****Sargassum duplicatum* (J. Agardh) J. Agardh
var. *rotundatum* Grunow**

Sargassum duplicatum (J. Agardh) J. Agardh var. *rotundatum* Grunow, 1915 [1915–1916]:392 ["*rotundata*"] [syntype localities: Philippines; Java, Indonesia; Seychelles].

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Sargassum cystocarpum* C. Agardh**

Sargassum cystocarpum C. Agardh, 1820b:33 [type locality: "E mari Indico"].—Martens, 1868:26, 72–73.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

****Sargassum cystophyllum* Montagne**

Sargassum cystophyllum Montagne, 1842d:249 [type locality: "Manilla," Luzon].—Montagne, 1846a:46.—J. Agardh, 1848:345.—Montagne, 1856:388.—De Toni, 1895b:113.—Grunow, 1915 [1915–1916]:414. *Carpacanthus cystophyllus* (Montagne) Kützing, 1849:623.—Martens, 1868:76–77.—Velasquez, Trono, and Doty, 1975:130.

PHILIPPINE DISTRIBUTION.—As above.

***Sargassum droserifolium* Bory de Saint-Vincent**

Sargassum droserifolium Bory de Saint-Vincent, 1828 [1826–1829]:129 [syntype localities: Port Praslin (Kambotorosh Harbor), New Ireland; New Zealand; Tahiti; New Guinea].—Grunow, 1915 [1915–1916]:410.

PHILIPPINE DISTRIBUTION.—Locality not specified.

****Sargassum droserifolium* Bory de Saint-Vincent
var.? *spathulatum* Grunow**

Sargassum droserifolium Bory de Saint-Vincent var.? *spathulatum* Grunow, 1915 [1915–1916]:411 ["*spathulata*"] [type locality: "in freto Bernardino" (San Bernardino Strait between Sorsogon Prov., Luzon, and Northern Samar Prov.)].

PHILIPPINE DISTRIBUTION.—As above.

Sargassum elongatum

Sargassum elongatum.—Manapat, 1969:38.

PHILIPPINE DISTRIBUTION.—PALAWAN.

NOTE.—Manapat did not give an author for this name and we have been unable to find its place of publication.

***Sargassum esperi* C. Agardh**

Sargassum esperi C. Agardh, 1820b:9 [syntype localities: Brazil; Bengal, India].—Montagne, 1844a:660.—Martens, 1868:74–75.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Sargassum filicinum* Harvey**

Sargassum filicinum Harvey, 1860a:327 [type locality: "East coast of Japan"].—Garcia, 1979:44 (table 1).

PHILIPPINE DISTRIBUTION.—MINDANAO.

***Sargassum filifolium* C. Agardh**

Sargassum filifolium C. Agardh, 1824:305 [type locality: Western Australia, Australia].—Grunow, 1916 [1915–1916]:2.

PHILIPPINE DISTRIBUTION.—“In freto Bernardino” [San Bernardino Strait between Sorsogon Prov., Luzon, and Northern Samar Prov.].

***Sargassum filifolium* C. Agardh var. *aciculare* (Grunow)
Grunow**

Sargassum aciculare Grunow, 1874:26 [type locality: Bribie I., Queensland, Australia].

Sargassum filifolium C. Agardh var. *aciculare* (Grunow) Grunow, 1916 [1915–1916]:3 [**acicularis*].

PHILIPPINE DISTRIBUTION.—“In freto Bernardino” [San Bernardino Strait between Sorsogon Prov., Luzon, and Northern Samar Prov.].

****Sargassum filiforme* Montagne**

Sargassum filiforme Montagne, 1844a:660 [type locality: “in insulis Philippinensibus”].—J. Agardh, 1848:346.—Kützing, 1849:614.—Montagne, 1856:383.—Martens, 1868:27, 74–75.—De Toni, 1895b:113.—Grunow, 1916 [1915–1916]:14.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

***Sargassum fluitans* (Børgesen) Børgesen**

Sargassum hystrix J. Agardh var. *fluitans* Børgesen, 1914a: 11, fig. 8 [type locality: Sargasso Sea].

Sargassum fluitans (Børgesen) Børgesen, 1914b:66, footnote.—Westernhagen, 1973a:66; 1974:113 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Sargassum fulvellum* (Turner) C. Agardh**

Fucus fulvellus Turner, 1808:147, pl. 66 [type locality: Korea Strait].

Sargassum fulvellum (Turner) C. Agardh, 1820b:34.—Domantay, 1962:287.—Cordero, 1973b:25 [*S. fulvellum* prox.].—Velasquez, Trono, and Doty, 1975:162.—Cordero, 1976c:23; 1979b:276; 1981c:407; 1982a:fig. 7; 1984c:53.

Sargassum enerve C. Agardh, 1820b:17 [type locality: “In Oceano” (“E mari Coreano” fide Yoshida, 1983: 148, fig. 26c)].—Sulit and San Juan, 1955:48 (table 1) pl. 2: fig. 1.—Domantay, 1962:274.—Manapat, 1969:38.—Westernhagen, 1973a:66; 1974:113 (table I).—Trono and Fortes, 1980:68.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:147.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Batangas. MASBATE. SAMAR: Western Samar. LEYTE (Biliran I.). PANAY: Aklan, Iloilo. CEBU (Mactan I.).

NOTE.—*Sargassum enerve* is included as a synonym on the authority of Yoshida (1983:148, 151).

***Sargassum furcatum* Kützing**

Sargassum furcatum Kützing, 1843b:362 [type locality: St. Thomas, Virgin Is.].—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

NOTE.—Grunow (1916 [1915–1916]:43), in agreement with J. Agardh (1889:108), considered this species a variety of *S. vulgare*, but Taylor (1960:277) recognized both species.

****Sargassum gaudichaudii* Montagne**

Sargassum gaudichaudii Montagne, 1842d:249 [syntype localities: Mauritius; “Manilla,” Luzon].—Montagne, 1846a:48, pl. 141; 1856:384.—Grunow, 1915 [1915–1916]:446.

Carpacanthus gaudichaudii (Montagne) Kützing, 1849:623.—Martens, 1868:76–77.—Velasquez, Trono, and Doty, 1975:130.

PHILIPPINE DISTRIBUTION.—LUZON: Manila.

***Sargassum giganteifolium* Yamada**

Sargassum giganteifolium Yamada in Okamura, 1925:105, pl. CCXXX [syntype localities: Enoshima, Kanagawa Prefecture and Futomi, Chiba Prefecture, Japan].—Sulit and San Juan, 1955:48 (table 1).—Domantay, 1962:284.—Manapat, 1969:37, 38.—Cordero, 1973b:26 [with query].—Velasquez, Trono, and Doty, 1975:162.—Cordero, 1981c:408; 1984b:63; 1984c:53.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.) Pangasinan, Batangas, Albay (Batan I.). MASBATE. SAMAR: Western Samar. LEYTE (Biliran I.). PANAY: Iloilo. CEBU (Mactan I.). PALAWAN.

NOTE.—Yoshida (1983:195) cites the holotype of this species as coming from Shichirigahama (Kanagawa Prefecture), Japan, but this locality is not mentioned in the protologue.

***Sargassum gracile* J. Agardh**

Sargassum gracile J. Agardh, 1848:310 [syntype localities: “in Oceano Indico ad Javam” and “inter Borneo et Sumatram,” Indonesia].—Dickie, 1876a:243.—Grunow, 1916 [1915–1916]:5.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.). Basilan Strait (between Mindanao and Basilan I.).

***Sargassum granuliferum* C. Agardh**

Sargassum granuliferum C. Agardh, 1820b:31 [type locality: “In mari Indico?”].—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Trono and Fortes, 1980:68.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:147.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Sargassum hemiphyllum* (Turner) C. Agardh**

Fucus hemiphyllus Turner, 1811:85, pl. 169 [type locality: Nagasaki, Japan].

Sargassum hemiphyllum (Turner) C. Agardh, 1820b:39.—Montagne, 1844a:661 [with query].—Sulit and San Juan, 1955:48 (table 1), pl. 2: fig. 2.—Domantay, 1962:285.—Manapat, 1969:37.—Velasquez, Trono, and Doty, 1975:162.—Cordero, 1976c:23.—Trono and Fortes, 1980:68.—Cordero, 1981c:406.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:147.—Cordero, 1984c:53.

Spongocarpus hemiphyllus (Turner) Kützinger, 1849:632.—Martens, 1868:80–81.—Velasquez, Trono, and Doty, 1975:163.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. MASBATE. SAMAR: Western Samar, Eastern Samar. PANAY: Iloilo. CEBU (Mactan I.).

Sargassum heterocystum Montagne

Sargassum heterocystum Montagne, 1842d:250 [type locality: "In mari chinensi Cochinchinam alluente" (Vietnam)].—Grunow, 1915 [1915–1916]:409.

PHILIPPINE DISTRIBUTION.—Locality not specified.

**Sargassum hombronianum* Montagne var.? *manilense* (Grunow) Grunow

Sargassum polycystum C. Agardh var. *manilense* Grunow in Piccone, 1886:44, 90 ["*manilensis*"] [type locality: Cavite Prov., Luzon].—De Toni, 1895b:104.

Sargassum hombronianum Montagne var.? *manilense* (Grunow) Grunow, 1916 [1915–1916]:8 ["*manilensis*"].

PHILIPPINE DISTRIBUTION.—As above.

Sargassum ilicifolium (Turner) C. Agardh

Fucus ilicifolius Turner, 1808:113, pl. 51 [type locality: Sunda Strait, Indonesia].

Sargassum ilicifolium (Turner) C. Agardh, 1820b:11.—Dickie, 1874a:190; 1876a:243.—Piccone, 1886:45, 90.—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Velasquez, Trono, and Doty, 1975:162.—Trono and Fortes, 1980:68.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:148.

Carpacanthus ilicifolius (Turner) Kützinger, 1849:625.—Martens, 1868:27, 78–79.—Velasquez, Trono, and Doty, 1975:130.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Manila, Cavite. MINDORO. MINDANAO: Zamboanga.

**Sargassum ilicifolium* (Turner) C. Agardh f. *benkulense* Grunow

Sargassum ilicifolium (Turner) C. Agardh f. *benkulense* Grunow, 1915 [1915–1916]:407 ["*benkulensis*"] [syntype localities: Pulau Tikus near Bengkulu, Sumatra; Manila, Luzon].

PHILIPPINE DISTRIBUTION.—As above.

Sargassum ilicifolium (Turner) C. Agardh var. *compactum* (Bory de Saint-Vincent) Grunow

Sargassum compactum Bory de Saint-Vincent, 1828 [1826–1829]:126 [type locality: Concepción, Chile].

Sargassum ilicifolium (Turner) C. Agardh var. *compactum* (Bory de Saint-Vincent) Grunow, 1915 [1915–1916]:405.

Carpacanthus spinulosus [misapplied name fide Grunow, l.c.].—Martens, 1868:27, 78–79 [in part].—Velasquez, Trono, and Doty, 1975:130 [in part].

PHILIPPINE DISTRIBUTION.—LUZON: Manila.

Sargassum ilicifolium (Turner) C. Agardh var.? *pseudospinulosum* Grunow

Sargassum ilicifolium (Turner) C. Agardh var.? *pseudospinulosum* Grunow, 1915 [1915–1916]:403 ["*pseudospinulosa*"] [type locality: near Atapupu Timor, Indonesia].

Carpacanthus spinulosus [misapplied name fide Grunow, l.c.].—Martens, 1868:27, 78–79 [in part].—Velasquez, Trono, and Doty, 1975:130 [in part].

PHILIPPINE DISTRIBUTION.—LUZON: Manila.

NOTE.—In view of the fact that Grunow (1915 [1915–1916]:399) attributed *Carpacanthus spinulosus* Kützinger (as *Sargassum hystrix* var. *spinulosus*) solely to the West Indies, it appears that he intended to include in *S. ilicifolium* var.? *pseudospinulosum* the Martens record of *C. spinulosus* from Manila as well as the one from Timor, even though he cited only the latter locality.

Sargassum latifolium (Turner) C. Agardh

Fucus latifolius Turner, 1809:66, pl. 94 [type locality: Red Sea].

Sargassum latifolium (Turner) C. Agardh, 1820b:13.—Dickie, 1876a:243.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

**Sargassum microcystum* J. Agardh

Sargassum microcystum J. Agardh, 1848:323 [syntype localities: Singapore; Moluccas; Manila, Luzon].

Carpacanthus microcystis (J. Agardh) Martens, 1868:28, 78–79 [including Philippine record].—Velasquez, Trono, and Doty, 1975:130.

PHILIPPINE DISTRIBUTION.—LUZON: Manila. MINDANAO: Zamboanga.

**Sargassum microcystum* J. Agardh f. *luzonense* Grunow

Sargassum microcystum J. Agardh f. *luzonense* Grunow, 1915 [1915–1916]:413 ["*luzonensis*"] [type locality: near Manila, Luzon].

Sargassum carpophyllum [misapplied name fide Grunow, 1915 [1915–1916]:413].—Grunow, 1867:56.

PHILIPPINE DISTRIBUTION.—As above.

**Sargassum microcystum* J. Agardh var. *microtis* Grunow

Sargassum microcystum J. Agardh var. *microtis* Grunow, 1915 [1915–1916]:414 [syntype localities: Java; Basilan Strait (between Mindanao and Basilan I.)].

PHILIPPINE DISTRIBUTION.—Basilan Strait.

Sargassum microphyllum C. Agardh

Sargassum microphyllum C. Agardh, 1820b:33 [type locality: "In India orientali"].—Grunow, 1915 [1915–1916]:446.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Sargassum miyabei* Yendo**

Sargassum miyabei Yendo, 1907:112, pl. XIV: figs. 13, 14 [lectotype locality: Cape Soya, Hokkaido, Japan fide Yoshida, 1978:122].
Sargassum kjellmanianum Yendo, 1907:102, pl. XV: figs. 1–4 [lectotype locality: Takashima, Hokkaido, Japan fide Yoshida, 1978:122].—Sulit and San Juan, 1955:48 (table 1).—Domantay, 1962:285.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PALAWAN.

NOTE.—The synonymy was proposed by Yoshida (1978).

***Sargassum myriocystum* J. Agardh**

Sargassum myriocystum J. Agardh, 1848:314 [syntype localities: Jakarta, Java, Indonesia; China; India].—Grunow, 1915 [1915–1916]:440.

PHILIPPINE DISTRIBUTION.—Locality not specified.

****Sargassum myriocystum* J. Agardh var. *euryphyllum* (Grunow) Grunow**

Sargassum polycystum J. Agardh var. *euryphyllum* Grunow in Piccone, 1886:44, 90 [*"euryphylla"*] [type locality: Ticao I., Masbate Prov.].—De Toni, 1895b:104.

Sargassum myriocystum J. Agardh var. *euryphyllum* (Grunow) Grunow, 1915 [1915–1916]:440 [*"euryphylla"*].

PHILIPPINE DISTRIBUTION.—As above.

***Sargassum natans* (Linnaeus) Gaillon**

Fucus natans Linnaeus, 1753:1160 [type locality: "in Pelago libere natans"].—M. Blanco, 1845:579; 1879:259.—Velasquez, Trono, and Doty, 1975:144.

Sargassum natans (Linnaeus) Gaillon, 1828:355.

Fucus bacciferus Turner, 1802:xxxii, 55 [superfluous name].

Sargassum bacciferum C. Agardh, 1820b:6.—Montagne, 1844a:660.—Velasquez, Trono, and Doty, 1975:162.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos.

NOTE.—*Fucus bacciferus* Turner, the intended basionym of *Sargassum bacciferum*, is a superfluous and hence illegitimate name since *F. natans* was cited as a synonym in the protologue. In the first edition of *Flora de Filipinas*, M. Blanco (1837:839) described this entity as a new species, *Fucus denticulatus* (a name used previously for four different species!). Martens (1868:45) pointed out that Blanco's description fits various species of *Sargassum*. In the absence of authentic specimens, no definitive placement can be made. Montagne's record, on the other hand, is documented by extant collections (Cuming 2251, presumably at PC and possibly other herbaria) and could be re-evaluated.

***Sargassum nigrifolium* Yendo**

Sargassum nigrifolium Yendo, 1907:127, pl. XVI: figs. 1–3 [lectotype locality: Misaki, Kanagawa Prefecture, Japan fide Yoshida, 1980:104].—Sulit and San Juan, 1955:48 (table 1); pl. 3.—Domantay, 1962:286.—Manapat, 1969:38.—Velasquez, Trono, and Doty,

1975:162.—Cordero, 1976c:24 [*S. nigrifolium* prox.]; 1981c:406.—Guzman, 1981:43, 51.—Cordero, 1984c:53.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. MASBATE. SAMAR: Western Samar. PANAY: Iloilo. PALAWAN.

***Sargassum oligocystum* Montagne**

Sargassum oligocystum Montagne, 1845:67–69 [type locality: Lampung Bay, Sumatra, Indonesia].

Sargassum binderi Sonder in J. Agardh, 1848:328 [syntype localities: Sunda Strait and Java, Indonesia; China Sea].—Piccone, 1886:47, 90.—De Toni, 1895b:47.—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Velasquez, Trono, and Doty, 1975:162.—Cordero, 1976c:22.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Cavite.

NOTE.—The synonymy was proposed by Womersley and Bailey (1970:299).

****Sargassum oligocystum* Montagne var.? *bernardinum* Grunow**

Sargassum oligocystum Montagne var.? *bernardinum* Grunow, 1915 [1915–1916]:386 [*"bernardina"*] [type locality: "in freto Bernardino" (San Bernardino Strait between Sorsogon Prov., Luzon, and Northern Samar Prov.)].

PHILIPPINE DISTRIBUTION.—As above.

****Sargassum oligocystum* Montagne var.? *subflexuosum* Grunow**

Sargassum oligocystum Montagne var.? *subflexuosum* Grunow, 1915:385 [*"subflexuosa"*] [syntype localities: "Fretum Bernardinum, Macassar"].

PHILIPPINE DISTRIBUTION.—San Bernardino Strait between Sorsogon Prov., Luzon, and Northern Samar Prov.

TAXON OF UNCERTAIN VALUE

The following infraspecific taxon is probably related to *Sargassum oligocystum*, but has not been formally transferred to it.

***Sargassum binderi* Sonder var. *vitiense* (Grunow) Grunow**

Sargassum echinocarpum J. Agardh var. *vitiense* Grunow, 1874:28 [type locality: Ovalau I., Fiji].

Sargassum binderi Sonder var. *vitiense* (Grunow) Grunow in Askenasy, 1888:28.—Piccone, 1889:31, 59.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Sargassum oocyste* J. Agardh**

Sargassum oocyste J. Agardh, 1848:97 [syntype localities: Chile; Moluccas, Indonesia].—Grunow, 1915 [1915–1916]:437.

PHILIPPINE DISTRIBUTION.—LUZON.

****Sargassum oocyste* J. Agardh var. *bernardinum* Grunow**

Sargassum oocyste J. Agardh var. *bernardinum* Grunow, 1915 [1915–1916]:437 [*“bernardina”*] [type locality: “in freto Bernardino” (San Bernardino Strait between Sorsogon Prov., Luzon, and Northern Samar Prov.)].

PHILIPPINE DISTRIBUTION.—As above.

***Sargassum paniculatum* J. Agardh**

Sargassum paniculatum J. Agardh, 1848:315 [type locality: “in mari Indico”].—Cordero, 1976c:24, fig. N.—Ang, 1984:548; 1985a:231; 1985b:294; 1985c:52.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Batangas.

***Sargassum parvifolium* (Turner) C. Agardh**

Fucus parvifolius Turner, 1819 [1815–1819]:33, pl. 221 [type locality: not specified].

Sargassum parvifolium (Turner) C. Agardh, 1820b:30.—Dickie, 1876a:243.—Grunow, 1916 [1915–1916]:13.—Velasquez, Trono, and Doty, 1975:163.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Sargassum patens* C. Agardh var. *schizophyllum* (Kützinger) Yendo**

Halochloa schizophylla Kützinger, 1843a:56 [type locality: Japan].

Sargassum patens C. Agardh var. *schizophyllum* (Kützinger) Yendo, 1905a:155 [*“schizophylla”*].—Sulit and San Juan, 1955: table 1.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

****Sargassum philippinense* Grunow**

Sargassum philippinense Grunow, 1916 [1915–1916]:166 [type locality: “in freto Bernardino” (San Bernardino Strait between Sorsogon Prov., Luzon, and Northern Samar Prov.)].

PHILIPPINE DISTRIBUTION.—As above.

***Sargassum piluliferum* (Turner) C. Agardh**

Fucus pilulifer Turner, 1808:145, pl. 65 [type locality: Nagasaki, Japan].

Sargassum piluliferum (Turner) C. Agardh, 1820b:27.—Manapat, 1969:38.—Cordero, 1981c:407; 1984c:54.

PHILIPPINE DISTRIBUTION.—MASBATE. SAMAR: Western Samar. PANAY: Iloilo. CEBU (Mactan I.). PALAWAN.

***Sargassum polyceratium* Montagne**

Sargassum polyceratium Montagne, 1837:356 [type locality: La Habana, Cuba].—Velasquez et al., 1973:22, pl. 8: fig. 41.—Hamoy and Garciano, 1975:71.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan. CENTRAL VISAYAS. CEBU.

***Sargassum polycystum* C. Agardh**

Sargassum polycystum C. Agardh, 1824:304 [type locality: Sunda Strait, Indonesia].—Montagne, 1844a:661.—Martens, 1868:72–73.—Dickie, 1874a:190.—De Toni, 1895b:103.—Howe, 1932:170.—Zaneveld, 1952:132; 1956:19; 1959:102.—Velasquez, Trono, and Doty, 1975:163.—Trono, 1976:219; 1978:12.—Trono and Tuason, 1978:13.—Fortes and Trono, 1980:61.—Trono and Fortes, 1980:68.—Trono and Ganzon-Fortes, 1980:49, fig. [s.n.].—Chan, 1981:385.—Ganzon-Fortes, 1981:21.—Laserna et al., 1981:447.—Trono and De Lara, 1981:9, pl. VI: fig. 3.—Laserna et al., 1982:52.—Trono and Ang, 1982:15.—Trono and Fortes, 1982:148.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.). MARINDUQUE. NEGROS: Negros Occidental. PALAWAN (Bugsuk I.).

***Sargassum pteropleuron* Grunow**

Sargassum pteropleuron Grunow, 1867:55, pl. V: fig. 1 [type locality: Nassau, New Providence I., Bahama Is.].—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Sargassum sagamianum* Yendo**

Sargassum sagamianum Yendo, 1907:151, pl. XVII: figs. 6–10 [lectotype locality: Oosashi, Mie Prefecture, Japan fide Yoshida, 1980:105, pl. VII: fig. 13].—Domantay, 1962:274.—Manapat, 1969:37.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Sargassum sandei* Reinbold**

Sargassum sandei Reinbold in Weber-van Bosse, 1913a:158, fig. 47, pl. IV: figs. 1, 2 [type locality: Flores, Indonesia].—Taylor, 1966b:357.—Velasquez, Trono, and Doty, 1975:163.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

***Sargassum serratifolium* (C. Agardh) C. Agardh**

Fucus serratifolius C. Agardh, 1815:41 [type locality: “prope Satsuma,” Kagoshima Prefecture, Japan].

Sargassum serratifolium (C. Agardh) C. Agardh, 1820b:16.—Sulit and San Juan, 1955:48 (table 1), pl. 1: fig. 2.—Domantay, 1962:285.—Manapat, 1969:37, 38.—Velasquez, Trono, and Doty, 1975:163.—Trono and Fortes, 1980:68.—Cordero, 1981c:407.—Trono and Fortes, 1982:148.—Cordero, 1984c:53.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Sur, Pangasinan. MASBATE. SAMAR: Western Samar, Eastern Samar. PANAY: Iloilo. CEBU (Mactan I.). PALAWAN.

***Sargassum siliquosum* J. Agardh**

Sargassum siliquosum J. Agardh, 1848:316 [syntype localities: Singapore; Jakarta, Java, Indonesia].—Piccone, 1886:45, 90.—De Toni, 1895b:107.—Seale, 1911:309.—Wester, 1916:159; 1921:224; 1924:

21.—Howe, 1932:170.—G. Blanco, 1938:513.—Quisumbing, 1951:1012.—Zaneveld, 1952:132.—Montilla and Blanco, 1953:166, fig. 5:6 [*"siliguism"*].—Sulit and San Juan, 1955:48 (table 1), pl. 1: fig. 1.—Zaneveld, 1956:20; 1959:102.—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Manapat, 1969:37.—Bersamin et al., 1973:188.—Velasquez, Trono, and Doty, 1975:163.—Cordero, 1976c:24.—Trono and Fortes, 1980:68.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:148.—Ang, 1984:548; 1985a:231; 1985b:294; 1985c:52.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Ilocos Sur, La Union, Pangasinan, Cavite, Batangas. MASBATE (Ticao I.). NEGROS: Negros Occidental. MINDANAO: Zamboanga.

****Sargassum siliquosum* J. Agardh var. ? *basilanicum* Grunow**

Sargassum siliquosum J. Agardh var. ? *basilanicum* Grunow, 1916 [1915–1916]:175 [*"basilanicum"*] [type locality: Basilan Strait (between Mindanao and Basilan I.)].

PHILIPPINE DISTRIBUTION.—As above.

****Sargassum siliquosum* J. Agardh var. *bicornutum* Grunow**

Sargassum siliquosum J. Agardh var. *bicornutum* Grunow, 1916 [1915–1916]:175 [*"bicornutum"*] [syntype localities: China Sea; Ticao I., Masbate Prov.].

PHILIPPINE DISTRIBUTION.—MASBATE (Ticao I.).

****Sargassum siliquosum* J. Agardh var. *manipaense* Grunow**

Sargassum siliquosum J. Agardh var. *manipaense* Grunow, 1916 [1915–1916]:175 [*"manipaense"*] [syntype localities: "ad insulas Philippinas, Manipa"].

PHILIPPINE DISTRIBUTION.—As above.

***Sargassum spinifex* C. Agardh**

Sargassum spinifex C. Agardh, 1820b:29 [type locality: "In mari Chinensi"].—Bailey and Harvey, 1862:173.—Quisumbing, 1951:1012.—Velasquez, Trono, and Doty, 1975:163.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.). MINDANAO.

***Sargassum subspathulatum* (Grunow) Grunow**

Sargassum pulchellum Grunow var. *subspathulatum* Grunow in Askenasy, 1888:25, pl. VI: figs. 5, 6 [including Philippine record] [type locality: MacCluer Gulf (Berau Bay), Irian Barat, Indonesia].

Sargassum subspathulatum (Grunow) Grunow, 1916 [1915–1916]:10.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Sargassum tenerrimum* J. Agardh**

Sargassum tenerrimum J. Agardh, 1848:305 [type locality: Bombay, India].—Cordero, 1976c:25 [*S. tenerrimum* prox.].

PHILIPPINE DISTRIBUTION.—BATANES.

***Sargassum vulgare* C. Agardh**

Fucus salicifolius S.G. Gmelin, 1768:98 [syntype localities: "Mare americanum?"; Sea of Marmara, Turkey].

Sargassum vulgare C. Agardh, 1820b:3 [superfluous name].—Montagne, 1846a:40.—Martens, 1868:74–75.—Westernhagen, 1973a:66.—Rivera, 1974:108.—Westernhagen, 1974:113 (table I).—Velasquez, Trono, and Doty, 1975:163.

PHILIPPINE DISTRIBUTION.—LUZON: Manila. CEBU (incl. Mactan I.).

NOTE.—The name *Sargassum vulgare* is traditionally given to a common species of the tropical Atlantic Ocean (e.g., Taylor, 1960:272). At the time of its publication, however, this name was superfluous and hence illegitimate, since the species to which it was applied included *Fucus salicifolius* S.G. Gmelin 1768, which may or may not prove to be conspecific with *S. vulgare* as traditionally interpreted. Future research will undoubtedly turn up a taxonomic synonym that can serve as the correct name.

***Sargassum vulgare* C. Agardh var. *indicum* C. Agardh**

Sargassum vulgare C. Agardh var. *indicum* C. Agardh, 1820b:4 [type locality: "E mari Indico"].—Montagne, 1846a:40.

PHILIPPINE DISTRIBUTION.—LUZON: Manila.

***Sargassum yendoii* Okamura and Yamada**

Sargassum yendoii Okamura and Yamada in Yamada, 1938b:121, figs. 1, 2, pls. 21, 22 [syntype localities: various, all in Japan].—Domantay, 1962:287.—Velasquez, Trono, and Doty, 1975:163.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Turbinaria Lamouroux

***Turbinaria condensata* Sonder**

Turbinaria condensata Sonder in Kützinger, 1860:25, pl. 69: fig. II [type locality: "In mari chinensi"].—Taylor, 1964:482, pl. 2: figs. 18–28.—Velasquez, Trono, and Doty, 1975:165.—Trono and Fortes, 1980:67; 1982:148.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. MINDANAO: Surigao. BASILAN.

***Turbinaria conoides* (J. Agardh) Kützinger**

Turbinaria vulgaris J. Agardh var. *conoides* J. Agardh, 1848:267 [syntype localities: India; China; Sri Lanka; Western Australia, Australia].

Turbinaria conoides (J. Agardh) Kützing, 1860:24, pl. 66: fig. II.—Howe, 1932:169.—Zaneveld, 1952:133; 1956:22; 1959:104.—Domantay, 1962:287.—Taylor, 1964:480, pl. 2: figs. 1–8 [var. *conoides*]; 1966b:358.—Trono, 1972a:100; 1973d:12.—Velasquez, Trono, and Doty, 1975:165.—Trono, 1976:218.—Liao and Sotto, 1980:98.—Saraya and Trono, 1980:33, pl. X: fig. 4 [var. *conoides*].—Trono and Fortes, 1980:67.—Trono and Ganzon-Fortes, 1980:55, fig. [s.n.].—Ganzon-Fortes, 1981:21.—Laserna et al., 1981:447.—Meñez and Calumpung, 1981:382.—Laserna et al., 1982:52.—Luistro, Cajipe, and Laserna, 1982:46.—Trono and Fortes, 1982:148.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Sur, Pangasinan, Batangas, Quezon (incl. Polillo Is.), Sorsogon. MINDORO: Oriental Mindoro. PANAY. CEBU (incl. Mactan I.). SIKUIJOR. MINDANAO: Zamboanga. BASILAN. PALAWAN (incl. Balabac I.). SULU: Tawitawi.

****Turbinaria conoides* (J. Agardh) Kützing
f. *laticuspidata* W.R. Taylor**

Turbinaria conoides (J. Agardh) Kützing f. *laticuspidata* W.R. Taylor, 1964:481, pl. 2: figs. 9–12 [type locality: Cebu I.].—Trono, 1972a:100.

PHILIPPINE DISTRIBUTION.—CEBU. MINDANAO: Zamboanga, Surigao. PALAWAN. SULU: Tawitawi.

****Turbinaria conoides* (J. Agardh) Kützing f. *retroflexa*
W.R. Taylor**

Turbinaria conoides (J. Agardh) Kützing f. *retroflexa* W.R. Taylor, 1964:481 [intended type locality: Tandayong I., Pangasinan Prov., Luzon].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. NEGROS: Negros Occidental

NOTE.—The name of this form is invalid because the protologue lacks an illustration in contravention of Article 39 of the ICBN.

***Turbinaria decurrens* Bory de Saint-Vincent**

Turbinaria decurrens Bory de Saint-Vincent, 1828 [1826–1829]:119 [type locality: floating between the Society Is. and New Guinea].—Taylor, 1964:477, pl. 1: figs. 22–28; 1966a:92; 1966b:358.—Kraft, 1972:329.—Velasquez, Trono, and Doty, 1975:166.—Trono, 1976:218.—Trono and Young, 1977:58.—Saraya and Trono, 1980:33, pl. X: fig. 1.—Trono and Fortes, 1980:67; 1982:148.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Sur, Pangasinan, Albay, Sorsogon. CATANDUANES. CEBU. MINDANAO: Misamis Oriental, Surigao del Sur, Davao. BASILAN. SULU: Tawitawi (Turtle Is.).

***Turbinaria denudata* Bory de Saint-Vincent**

Turbinaria denudata Bory de Saint-Vincent, 1828 [1826–1829]:117 [syntype localities: various, in the Pacific and Indian oceans and the Caribbean Sea].—Montagne, 1844a:661.—Bailey and Harvey, 1862:173.—Velasquez, Trono, and Doty, 1975:166.

PHILIPPINE DISTRIBUTION.—MINDANAO.

NOTE.—According to J. Agardh (1848:266, 267) and Barton (1891:217, 219), *Turbinaria denudata* as originally proposed by Bory de Saint-Vincent included specimens referable to *T. ornata* (Turner) J. Agardh and *T. conoides* (J. Agardh) Kützing. Bory de Saint-Vincent also included material from the West Indies that probably is referable to *T. turbinata* (Linnaeus) Kuntze, the commonest *Turbinaria* in that region. *Turbinaria denudata* should be lectotypified on the basis of authentic specimens at PC. Depending on the specimen chosen, *T. denudata* would become a synonym of *T. turbinata* or displace either *T. ornata* or *T. conoides*. Taylor (1964; 1966a) did not mention *T. denudata*.

***Turbinaria filamentosa* Yamada**

Turbinaria filamentosa Yamada, 1925b:243, fig. 1 [type locality: Garan-bi (O-luan), Taiwan].—Cordero, 1976c:25, fig. o.

PHILIPPINE DISTRIBUTION.—BATANES.

****Turbinaria luzonensis* W.R. Taylor**

Turbinaria luzonensis W.R. Taylor, 1964:482, pl. 2: figs. 13–17. [type locality: Mulanay, Quezon Prov., Luzon].—Velasquez, Trono, and Doty, 1975:166.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon.

***Turbinaria murrayana* Barton**

Turbinaria murrayana Barton, 1891:218, pl. LIV (54): fig. 2 [syntype localities: New Guinea; Macassar, Celebes, Indonesia].—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Turbinaria ornata* (Turner) J. Agardh**

Fucus turbinatus Linnaeus var. *ornatus* Turner, 1808:50, pl. 24: figs. c, d [type locality: not specified].

Turbinaria ornata (Turner) J. Agardh, 1848:266.—Martens, 1868:27, 47, 76–77.—Dickie, 1874a:190.—Zaneveld, 1952:132; 1956:21; 1959:103.—Agor, 1962:34.—Domantay, 1962:287.—Taylor, 1964:483, pl. 3: figs. 1–6 [var. *ornata*]; 1966a:98; 1966b:358.—Villones and Magdamo, 1968:27, fig. 22.—Manapat, 1969:37, 38.—Velasquez, 1971:443, fig. 24.—Cornejo and Velasquez, 1972:171, 175, 183.—Kraft, 1972:328, 329, 332.—Reyes, 1972:147.—Trono, 1972a:100.—Cordero, 1973b:26.—Velasquez et al., 1973:22, pl. 8: fig. 40.—Ortega, Alcala, and Reyes, 1974:185, 186, 188.—Hamoy and Garciano, 1975:71.—Velasquez, Trono, and Doty, 1975:166.—Cordero, 1976c:9, 26.—Trono, 1976:217; 1978:14.—Trono and Tuason, 1978:13.—Vannajan and Trono, 1978:14, fig. 11.—Cordero, 1979b:276.—Garcia, 1979:44 (table 1).—Puig and Cordero, 1979:33.—Liao and Sotto, 1980:98.—Reyes, 1980:122, pl. 4: fig. 1.—Saraya and Trono, 1980:33.—Trono and Fortes, 1980:67.—Trono and Ganzon-Fortes, 1980:57, fig. [s.n.].—Ganzon-Fortes, 1981:21.—Laserna et al., 1981:447.—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:10, pl. VII: fig. 3.—Laserna et al., 1982:52.—

Trono and Fortes, 1982:148.—Hurtado-Ponce, 1983:123.—Cordero, 1984b:62; 1984c:53.—Marcos-Angarayngay, 1984a:14, fig. 12.—Tungpalan, 1984:143.

PHILIPPINE DISTRIBUTION.—**BATANES.** LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Ilocos Sur, Pangasinan, Bataan, Cavite, Batangas, Quezon, Sorsogon. **CATANDUANES.** MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. **MARINDUQUE.** MASPATE. **LEYTE** (Biliran I.). **PANAY:** Aklan, Antique (Panagatan Cays). **NEGROS:** Negros Oriental. **CEBU** (incl. Mactan I.). **SIGUIJOR.** MINDANAO: Zamboanga, Davao. **BASILAN.** **PALAWAN** (incl. Culion I., Balabac I.). **SULU:** Sulu, Tawitawi (Cagayan Sulu I.).

***Turbinaria ornata* (Turner) J. Agardh
f. *evesiculosa* (Barton) W.R. Taylor**

Turbinaria conoides (J. Agardh) Kützing var. *evesiculosa* Barton, 1891:217 [type locality: Edam (Damar Besar) I./Enkhuizen shoal, near Jakarta, Java, Indonesia].

Turbinaria ornata (Turner) J. Agardh f. *evesiculosa* (Barton) W.R. Taylor, 1964:485.—Trono, 1973d:12, pl. 7: fig. 28.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. **CEBU.**

***Turbinaria trialata* (J. Agardh) Kützing**

Turbinaria vulgaris J. Agardh var. *trialata* J. Agardh, 1848:268 [syntype localities: Brazil; West Indies].

Turbinaria trialata (J. Agardh) Kützing, 1860:24, pl. 67.—Domantay, 1962:287.—De Leon, Eufemio, and Pineda, 1963:82 (table 1).—Velasquez, Trono, and Doty, 1975:166.—Cordero, 1979b:286.—Trono and Fortes, 1980:67; 1982:148.—Cordero, 1984b:62; 1984c:53.—Marcos-Angarayngay, 1984a:16, fig. 13.—Tungpalan, 1984:143.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan. **MASPATE.** **PANAY:** Aklan. **MINDANAO:** Zamboanga. **PALAWAN.**

***Turbinaria trialata* (J. Agardh) Kützing var. *capensis*
Kützing**

Turbinaria trialata (J. Agardh) Kützing var. *capensis* Kützing, 1860:24, pl. 67: fig. II [type locality: "Caput bonae spei" (Cape of Good Hope, South Africa)].—Meñez, 1961:68.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Turbinaria turbinata* (Linnaeus) Kuntze**

Fucus turbinatus Linnaeus, 1753:1160 [type locality: "in Americae rupibus marinis" (Jamaica fide Howe, 1920:591)].

Turbinaria turbinata (Linnaeus) Kuntze, 1898:434.—Meñez, 1961:68.—Westernhagen, 1973a:66; 1974:113 (table 1).—Velasquez, Trono, and Doty, 1975:166.—Trono and Fortes, 1980:67; 1982:148.—Cordero, 1984b:62.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. **CEBU** (Mactan I.). **PALAWAN.**

NOTE.—According to Taylor (1964:476), *T. turbinata* is an Atlantic-Caribbean species.

***Turbinaria vulgaris* J. Agardh**

Turbinaria vulgaris J. Agardh, 1848:267 [type locality: floating between the Society Is. and New Guinea].—Dickie, 1876a:243, 244.—Velasquez, Trono, and Doty, 1975:166.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.). **MINDANAO:** Zamboanga.

NOTE.—*Turbinaria vulgaris* is a name used by J. Agardh to encompass four varieties, namely, α *conoides*, β *decurrens*, γ *triquetra*, and δ *trialata*. All but var. *decurrens* were newly described and were subsequently elevated to specific rank. Var. *decurrens*, however, was based on *T. decurrens* Bory de Saint-Vincent, so that according to the ICBN, *T. vulgaris* is a superfluous name (Article 63.1) and is automatically typified by the type of *T. decurrens* (Article 7.11). To which of the four component species the Dickie records should be referred can be determined only from an examination of the specimens.

Class CHLOROPHYCEAE

Order CTENOCLADALES

Family ULVELLACEAE

Phaeophila Hauck

Phaeophila dendroides (P. Crouan and H. Crouan) Batters

Ochlochaete dendroides P. Crouan and H. Crouan, 1852:no. 346 [type locality: Brest, Finistère, France].

Phaeophila dendroides (P. Crouan and H. Crouan) Batters, 1902:13.—Tanaka, 1967:13, fig. 1.—Velasquez, Trono, and Doty, 1975:159.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.).

Order ULVALES

Family MONOSTROMATACEAE

Monostroma Thuret

Monostroma latissimum Wittrock

Monostroma latissimum Wittrock, 1866:33, pl. I: fig. 4 [syntype localities: various, including Europe, North Africa, and New Zealand].—Taylor, 1966b:343.—Velasquez, Trono, and Doty, 1975:154.

PHILIPPINE DISTRIBUTION.—PALAWAN.

Monostroma nitidum Wittrock

Monostroma nitidum Wittrock, 1866:41, pl. II: fig. 7 [syntype localities: Tonga; China].—Gilbert, 1961:415.—Trono, 1973c:5.—Velasquez, Trono, and Doty, 1975:154.—Cordero, 1980b:19, pl. 4.—Trono and Fortes, 1980:66.—Ganzon-Fortes, 1981:21.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. SIKUIJOR. PALAWAN.

Family ULVACEAE

Enteromorpha Link

The taxonomic arrangement of the species of this genus follows that proposed by Bliding (1963).

Enteromorpha aragoensis Bliding

Enteromorpha aragoensis Bliding, 1960:174, fig. 2 [syntype localities: various, in Atlantic France and Mediterranean Sea].—Gilbert and Doty, 1969:121.—Velasquez, Trono, and Doty, 1975:142.

PHILIPPINE DISTRIBUTION.—LUZON: Quezon.

Enteromorpha chaetomorphoides Børgesen

Enteromorpha chaetomorphoides Børgesen, 1911:149, fig. 12 [type locality: St. Thomas, Virgin Is.].—Fortes and Trono, 1980:55.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Enteromorpha clathrata (Roth) Greville

Conferva clathrata Roth, 1806:175 [type locality: Baltic Sea, Germany].

Enteromorpha clathrata (Roth) Greville, 1830:lxvi, 181.—Trono, 1973b:213.—Velasquez et al., 1973:9, pl. 1: fig. 3.—Trono, 1975:25.—Cordero, 1976c:10; 1977b:19, pl. I: figs. 1, 2.—Reyes, 1978:146, pl. 3: figs. 2–5.—Calumpong, 1980:143 (table 3).—Puig and Cordero, 1979:18.—Cordero, 1980b:16, fig. 1A.—Liao and Sotto, 1980:96.—Trono and De Lara, 1981:2, pl. I: fig. 2.—Calumpong, 1982:145.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Batangas, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.). LEYTE (Biliran I.). NEGROS: Negros Oriental (incl. Apo I.). CEBU (Mactan I.). SIKUIJOR. BOHOL. SULU: Sulu (Siasi I.).

NOTE.—J. Agardh (1883:153) is traditionally accredited with the combination *Enteromorpha clathrata*, but in fact it was first made by Greville.

Enteromorpha compressa (Linnaeus) Nees

Ulva compressa Linnaeus, 1753:1163 [type locality: Europe].

Enteromorpha compressa (Linnaeus) Nees, 1820: Index [2].—Galutira and Velasquez, 1964:494, pl. 1: fig. 2; pl. 6: fig. 20.—Cornejo and Velasquez, 1972:173, pl. 1: fig. 7.—Velasquez, 1972:63.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:142.—Cordero, 1976c:9; 1977b:20.—Vannajan and Trono, 1977:39.—Puig and Cordero, 1979:18.—Velasquez, 1979b:230.—Cordero, 1980b:17, pl. 1.—Saraya and Trono, 1980:8.—Trono and Fortes, 1980:65.—Chan, 1981:387.—Fortes, 1981b:396.—Ganzon-Fortes, 1981:21.—Meñez and Calumpong, 1981:382.—Calumpong, 1982:145.—Cordero, 1982a:60, fig. 1.—Trono and Fortes, 1982:145.—Hurtado-Ponce, 1983:104.²—Hurtado-Ponce and Modelo, 1983:146.—Marcos-Agngarayngay, 1983:66, fig. 4.—Cordero, 1984a:70.—Hurtado-Ponce, 1984:179.—Marcos-Agngarayngay, 1984b:119.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Manila, Batangas. SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Occidental (incl. Ilacaon I.), Negros Oriental. CEBU (incl. Mactan I.). SIKUIJOR. MINDANAO: Surigao del Sur.

NOTE.—Either Link (1820:5) or Greville (1830:lxvi, 180) is traditionally accredited with having first made the combination *Enteromorpha compressa*, but in fact it was Nees

who did so in the index that he prepared for the collective work in which Link's article was published.

***Enteromorpha flexuosa* (Wulfen) J. Agardh**

Conferva flexuosa Roth, 1800b:188 [type locality: Trieste, Italy].

Ulva flexuosa Wulfen, 1803:1.

Enteromorpha flexuosa (Wulfen) J. Agardh, 1883:126 [including subsp. *flexuosa*].—Piccone, 1886:25, 89.—Gilbert, 1946:77; 1961:414.—Taylor, 1966b:343.—Gilbert and Doty, 1969:121, fig. 1.—Cornejo and Velasquez, 1972:173, pl. 4: fig. 30.—Trono, 1973b:213; 1975:25.—Velasquez, Trono, and Doty, 1975:142.—Vannajan and Trono, 1977:39, fig. 15.—Carumbana and Luchavez, 1980:189.

Enteromorpha intestinalis (Linnaeus) Link var. *tubulosa* Kützting, 1845:247 [type locality: fresh water, Germany].

Enteromorpha tubulosa (Kützting) Kützting, 1856:11, pl. 32: fig. II.—Sulit, Navarro, and San Juan, 1952:170 (table 5).—Rabanal and Montalban, 1953:143.—Villadolid and Villaluz, 1953:5–10.—Villaluz, 1953:103.—Gilbert, 1961:415.—Rabanal and Montalban, 1961:4.—Velasquez, Trono, and Doty, 1975:142.—Vannajan and Trono, 1977:39.—Trono and Ang, 1982:3.

Enteromorpha intestinalis (Linnaeus) Link f. *tubulosa* (Kützting) V.J. Chapman, 1937:229.—Reyes, 1972:138.

Enteromorpha intermedia Bliding, 1955:262, figs. 1–5 [syntype localities: various in northern Europe; USA].—Gilbert and Doty, 1969:121, fig. 2.—Velasquez, Trono, and Doty, 1975:142.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Sur, Rizal, Manila, Batangas, Quezon, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MASBATE (Ticao I.). NEGROS: Negros Oriental. MIN-DANAO: Zamboanga. BASILAN. PALAWAN (incl. Balabac I., Bugsuk I., Cuyo I.). SULU: Sulu (Siasi I.).

NOTE.—*Conferva flexuosa* Roth, the intended basionym of *Enteromorpha flexuosa*, is a later homonym of *C. flexuosa* O.F. Müller (1782:5, pl. 882) and hence not priorable. *Ulva flexuosa* Wulfen is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Enteromorpha flexuosa* (Wulfen) J. Agardh
subsp. *paradoxa* (C. Agardh) Bliding**

Conferva paradoxa Dillwyn, 1809 [1802–1809]:70, suppl. pl. f [syntype localities: Bangor, Wales; Brighton, England].

Ulva paradoxa C. Agardh, 1817:xxii.

Enteromorpha flexuosa (Wulfen) J. Agardh subsp. *paradoxa* (C. Agardh) Bliding, 1963:79, figs. 42–45.

Scytosiphon erectus Lyngbye, 1819:65, pl. 15:c [type locality: Norway].

Enteromorpha erecta (Lyngbye) Carmichael in W. Hooker, 1833:314.—Gilbert, 1961:414.—Velasquez, Trono, and Doty, 1975:142.

Enteromorpha plumosa Kützting, 1843b:300, pl. 20:1 [type locality: Trieste, Italy].—Gilbert, 1961:415.—Galutira and Velasquez, 1964:494, pl. 1: figs. 1a–c; pl. 6: fig. 19.—Velasquez, 1972:63.—Velasquez, Trono, and Doty, 1975:142.—Velasquez, 1979b:230.—Trono and Fortes, 1980:65.—Ganzon-Fortes, 1981:21.—Cordero, 1982a:60.—Trono and Fortes, 1982:146.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Bulacan, Rizal.

NOTE.—*Conferva paradoxa* Dillwyn, the intended basionym of *Enteromorpha flexuosa* subsp. *paradoxa*, is a later homonym of *C. paradoxa* Roth (1806:172) and hence not priorable. *Ulva paradoxa* C. Agardh is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Enteromorpha flexuosa* (Wulfen) J. Agardh
f. *submarina* Collins and Hervey**

Enteromorpha flexuosa (Wulfen) J. Agardh f. *submarina* Collins and Hervey, 1917:34 [type locality: Bermuda].—Taylor, 1966b:343.

PHILIPPINE DISTRIBUTION.—LUZON: Rizal.

***Enteromorpha intestinalis* (Linnaeus) Nees**

Ulva intestinalis Linnaeus, 1753:1163 [type locality: "in Mari omni"].—M. Blanco, 1837:842; 1845:582; 1879:262.—Velasquez, Trono, and Doty, 1975:167.

Enteromorpha intestinalis (Linnaeus) Nees, 1820, Index [2].—Martens, 1868:47, 60–61.—Scale, 1911:309.—Wester, 1916:158.—Merrill, 1918:39.—Wester, 1921:224; 1924:21.—G. Blanco, 1938:512.—Gilbert, 1946:77.—Zaneveld, 1950:113.—Quisumbing, 1951:1009.—Montilla and Blanco, 1953:166.—Rabanal and Montalban, 1953:143.—Rabanal et al., 1953:156.—Velasquez, 1953a:100.—Zaneveld, 1956:11; 1959:97.—Gilbert, 1961:415.—Rabanal and Montalban, 1961:4.—Villones and Magdamo, 1968:25, fig. 12.—Velasquez, 1971:431, fig. 5.—Reyes, 1972:137.—Trono, 1973c:3, fig. 17.—Velasquez et al., 1973:9, pl. 1: fig. 2.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:142.—Vannajan and Trono, 1977:38, fig. 16.—Reyes, 1978:146, 162, pl. 3: fig. 1.—Puig and Cordero, 1979:18.—Carumbana and Luchavez, 1980:189.—Cordero, 1980b:18, pl. 2.—Liao and Sotto, 1980:96.—Trono and Fortes, 1980:65.—Trono and Ganzon-Fortes, 1980:5, fig. [s.n].—Fortes, 1981b:396.—Ganzon-Fortes, 1981:21.—Meñez and Calumpang, 1981:382.—Trono and De Lara, 1981:1, pl. I: fig. 1.—Calumpang, 1982:145.—Cordero, 1982a:60.—Trono and Fortes, 1982:146.—Hurtado-Ponce, 1983:105.—Hurtado-Ponce and Modelo, 1983:146.—Marcos-Angarayngay, 1983:69, fig. 5.—Cordero, 1984a:70.—Marcos-Angarayngay, 1984b:120.—Tungpalan, 1984:144.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Pangasinan, Bataan, Rizal, Manila, Cavite, Batangas, Quezon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. LEYTE (Biliran I.). NEGROS: Negros Oriental (incl. Apo I.). CEBU (Mactan I.). SIKUJOR.

NOTE.—Either Link (1820:5) or Greville (1830:lxvi, 179) is traditionally accredited with having first made the combination *Enteromorpha intestinalis*, but in fact it was Nees who did so in the index that he prepared for the collective work in which Link's article was published.

***Enteromorpha kylinii* Bliding**

Enteromorpha kylinii Bliding, 1948:199, figs. 1–3 ["*kylini*"] [type locality: Kristineberg, Sweden].—Trono, 1973b:213; 1973c:4.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. SULU: Sulu (Siasi I.).

***Enteromorpha lingulata* J. Agardh**

Enteromorpha lingulata J. Agardh, 1883:143 [syntype localities: North Atlantic; Gulf of Mexico; New Zealand; Tasmania].—Howe, 1932:169.—Gilbert, 1946:77; 1961:415.—Taylor, 1966b:343.—Velasquez, Trono, and Doty, 1975:142.—Cordero, 1976c:10; 1977b:20.—Vannajan and Trono, 1977:38, fig. 14.—Cordero, 1980b:18, pl. 3.—Trono and Fortes, 1980:65.—Chan, 1981:387, 389.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:146.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Ilocos Sur, Pangasinan, Rizal, Manila, Quezon. PANAY. BASILAN.

***Enteromorpha prolifera* (O.F. Müller) J. Agardh**

Ulva prolifera O.F. Müller, 1778:7, pl. 763(1) [type locality: Denmark].
Enteromorpha prolifera (O.F. Müller) J. Agardh, 1883:129.—Merrill, 1918:39.—Gilbert, 1946:77; 1961:415.—Cordero, 1973b:16.—Velasquez, Trono, and Doty, 1975:142.—Trono and Fortes, 1980:65.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:146.—Cordero, 1984a:70.
Enteromorpha salina Kützinger, 1845:247 [type locality: near Hildesheim, West Germany].—Chan, 1981:387, 389.
Ulva compressa [misapplied name fide Collins in Merrill, 1918:39].—M. Blanco, 1837:842; 1845:581; 1879:261.—Velasquez, Trono, and Doty, 1975:167.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Ilocos Sur, Pangasinan, Manila Bay, Batangas. LEYTE (Biliran I.). MINDANAO: Zamboanga.

NOTE.—Martens (1868:47, 62–63) identified Blanco's plant as *Enteromorpha complanata* Kützinger var. *crinita* (Nees) Kützinger, which Bliding (1963:119) referred to *E. ramulosa*. In the absence of authentic specimens, no definitive placement can be made.

***Enteromorpha ramulosa* (J.E. Smith) Carmichael**

Ulva ramulosa J.E. Smith, 1810 [1809–1810]: pl. 2137 [type locality: Bantry Bay, Eire].
Enteromorpha ramulosa (J.E. Smith) Carmichael in W. Hooker, 1833:315.—Taylor, 1966b:343 [*E. ramulosa* prox.].—Gilbert and Doty, 1969:122, fig. 3.—Velasquez, Trono, and Doty, 1975:142.—Fortes, 1981b:396.
Conserva crinita Roth, 1797:162, pl. 1: fig. 3 [type locality: near Eckwarden, Oldenburg, West Germany].
Enteromorpha crinita Nees, 1820: Index [2].—Martens, 1868:62–63.—Weber-van Bosse, 1913a:55.—Gilbert, 1946:77; 1961:414.—Velasquez, Trono, and Doty, 1975:142.—Saraya and Trono, 1980:8.
Enteromorpha clathrata (Roth) Greville var. *crinita* (Nees) Hauck, 1885 [1883–1885]:429.—Meñez and Calumpung, 1981:382.
Enteromorpha ramulosa (J.E. Smith) Carmichael var. *spinosa* Kützinger, 1845:247 [syntype localities: North Sea; Adriatic Sea].
Enteromorpha spinescens Kützinger, 1856:12, pl. 33: fig. III.—Taylor, 1966b:343.—Velasquez, Trono, and Doty, 1975:142.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Ilocos Sur, Pangasinan, Rizal, Batangas. MINDORO: Oriental Mindoro. CENTRAL VISAYAS. SULU: Sulu (Jolo I.).

NOTE.—*Conserva crinita* Roth, the intended basionym of *Enteromorpha crinita*, is a later homonym of *C. crinita* Withering (1776:751) and hence not priorable. *Enteromorpha crinita* Nees is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN. In elevating *E. ramulosa* var. *spinosa* to the status of species, Kützinger altered the spelling of the epithet to *spinescens*.

Ulva* Linnaeus**Ulva fasciata* Delile**

Ulva fasciata Delile, 1813:297, pl. 58: fig. 5 [type locality: Alexandria, Egypt].—Gilbert, 1961:415.—Reyes, 1972:138.—Rivera, 1974:108.—Velasquez, Trono, and Doty, 1975:167.—Trono and Fortes, 1980:65.—Ganzon-Fortes, 1981:21.—Cordero, 1982a:60, 61.—Trono and Fortes, 1982:145.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental. CEBU. SULU: Sulu (Jolo I.).

***Ulva lactuca* Linnaeus**

Ulva lactuca Linnaeus, 1753:1163 [type locality: "in Oceano"].—Gilbert, 1946:77.—Velasquez, 1949:155.—Zaneveld, 1950:113.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:12; 1959:98.—Gilbert, 1961:416.—Galutira and Velasquez, 1964:495, pl. 1, fig. 3; pl. 6: fig. 21.—Taylor, 1966b:344.—Velasquez, 1968a:120, fig. 3.—Villones and Magdano, 1968:25, fig. 16.—Velasquez, 1971:431, fig. 6.—Reyes, 1972:138.—Trono, 1972a:87, 89.—Velasquez, 1972:63.—Trono, 1973a:127; 1973b:213; 1973c:5.—Velasquez et al., 1973:9, pl. 1: fig. 1.—Westernhagen, 1974:112 (table I).—Hamoy and Garciano, 1975:71.—Trono, 1975:26.—Velasquez, Trono, and Doty, 1975:167.—Vannajan and Trono, 1977:40, fig. 12, 13.—Reyes, 1978:146, 162, pl. 3: fig. 7.—Velasquez, 1979b:230.—Cordero, 1980b:19, pls. 5, [56].—Liao and Sotto, 1980:96.—Trono and Fortes, 1980:65.—Trono, Velasquez, and Guevarra, 1980:77.—Ganzon-Fortes, 1981:21.—Guzman, 1981:43, 50, 52.—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:2, pl. 1: fig. 4.—Calumpung, 1982:145.—Cordero, 1982a:60, 61.—Luistro, Cajipe, and Laserna, 1982:46.—Trono and Fortes, 1982:145.—Hurtado-Ponce, 1983:105.—Hurtado-Ponce and Modelo, 1983:146.—Marcos-Agngarayngay, 1983:70, fig. 6.—Cordero, 1984a:71.—Hurtado-Ponce, 1984:179.—Marcos-Agngarayngay, 1984b:120.—Tungpalan, 1984:139.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Manila Bay, Rizal, Cavite, Batangas, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. NEGROS: Negros Occidental (Ilacon I.), Negros Oriental (incl. Apo I.). CEBU (incl. Mactan I.). SQUIJOR. MINDANAO: Zamboanga. BASILAN. PALAWAN (incl. Cuyo I.). SULU: Sulu (Siasi I.).

***Ulva latissima* auctorum**

Ulva latissima [misapplied name].
Ulva lactuca Linnaeus var. *latissima* [misapplied name].—Weber-van Bosse, 1913a:50.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Pearl Bank).

NOTE.—The name *Ulva latissima* Linnaeus has traditionally been misapplied to representatives of the genus with very broad sheet-like fronds, whereas the type is referable to *Laminaria saccharina* (Linnaeus) Lamouroux (see Silva, 1952a:295 and Papenfuss, 1960:303). While European records apparently are referable to *Ulva gigantea* (Kützinger) Bliding (1969:558), Weber-van Bosse's material probably belongs elsewhere.

Ulva pertusa Kjellman

Ulva pertusa Kjellman, 1897b:4, pl. 1: figs. 1–5; pl. 3: figs. 1–8 [syntype localities: various, all in Japan].—Domantay, 1962:281.—Reyes, 1972:138.—Trono, 1975:26.—Velasquez, Trono, and Doty, 1975:167.—Cordero, 1976c:9, 10; 1977b:20; 1980b:20, pl. 6.—Trono and Fortes, 1980:65.—Ganzon-Fortes, 1981:21.—Cordero, 1982a: fig. 2.—Trono and Fortes, 1982:145.—Cordero, 1984a:71; 1984c:50.—Tungpalan, 1984:139.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Sorsogon. MASBATE. NEGROS: Negros Oriental. SQUIJOR.

Ulva reticulata Forsskål

Ulva reticulata Forsskål, 1775:187 [syntype localities: "Gomfodae" (Al-Qunfidha), Saudi Arabia; Mokha, Yemen].—Montagne, 1844a:659.—Dickie, 1876a:243, 244.—Piccone, 1886:22, 89.—Weber-van Bosse, 1913a:52.—Gilbert, 1946:77; 1961:416.—Meñez, 1961:47, pl. 1: figs. 14–16.—Domantay, 1962:281.—Taylor, 1966b:344.—Velasquez, 1971:431, fig. 7.—Reyes, 1972:138.—Trono, 1972a:94.—Cordero, 1973b:16.—Trono, 1973b:212; 1973d:4, pl. 1: fig. 3.—Westernhagen, 1973b:369 (table 3).—Ortega, Alcalá, and Reyes, 1974:187.—Rivera, 1974:108.—Westernhagen, 1974:112 (table I).—Trono, 1975:27.—Velasquez, Trono, and Doty, 1975:167 [excluding Blanco and Martens records].—Taylor, 1977b:8.—Reyes, 1978:147, pl. 3: figs. 8, 9.—Cordero, 1979b:279.—Puig and Cordero, 1979:19.—Calumpung, 1980:143 (table 3).—Cordero, 1980b:20, pl. [45].—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:7.—Cordero, 1981d:63, fig. 4.—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:2, pl. 1: fig. 3.—Hurtado-Ponce, 1983:106.—Hurtado-Ponce and Modelo, 1983:146.—Marcos-Agngarayngay, 1983:70, fig. 7.—Cordero, 1984a:71; 1984b:57; 1984c:50.—Hurtado-Ponce, 1984:179.—Marcos-Agngarayngay, 1984b:120.—Tungpalan, 1984:139.

Phycoseris reticulata (Forsskål) Kützinger, 1849:478.—Martens, 1868:23, 60–61 [excl. Blanco record].—Velasquez, Trono, and Doty, 1975:159.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos Norte, La Union, Pangasinan, Cavite, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.). MASBATE (incl. Ticao I.). SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SQUIJOR. BOHOL. MINDANAO: Zamboanga. BASILAN. PALAWAN. SULU: Sulu (Jolo I., Siasi I.), Tawitawi.

Ulva rigida C. Agardh

Ulva rigida C. Agardh, 1822a:410 [lectotype locality: Cádiz, Spain fide Papenfuss, 1960:305].

Ulva lactuca Linnaeus var. *rigida* (C. Agardh) Le Jolis, 1863:38.—Weber-van Bosse, 1913a:50.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (Jolo I.).

Order CLADOPHORALES

Family ANADYOMENACEAE

Anadyomene Lamouroux

Anadyomene brownii (J.E. Gray) J. Agardh

Calomena brownii J.E. Gray, 1866:46, pl. XLIV: fig. 3 [type locality: Australia].

Anadyomene brownii (J.E. Gray) J. Agardh, 1887:127.—Taylor, 1966b:349.—Velasquez, Trono, and Doty, 1975:128.

PHILIPPINE DISTRIBUTION.—PALAWAN (Balabac I.). SULU: Tawitawi (Turtle Is.).

**Anadyomene esepitata* Gilbert

Anadyomene esepitata Gilbert, 1961:425, pl. 1 [type locality: Dalupiri I., Babuyan Is., Cagayan Prov., Luzon].—Velasquez, Trono, and Doty, 1975:128.—Cordero, 1977b:30, pl. III: fig. 12; pl. IV: fig. 15.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.). CENTRAL VISAYAS.

**Anadyomene leclancheri* Decaisne

Anadyomene leclancheri Decaisne, 1844:236 [type locality: "Sooloo"].—Gilbert, 1946:77; 1961:427.—Velasquez, Trono, and Doty, 1975:128. *Cystodictyon leclancheri* (Decaisne) J.E. Gray, 1866:72, pl. XLIV: fig. 6 ["*leclancherii*"].—De Toni, 1889:373.

PHILIPPINE DISTRIBUTION.—Sulu Archipelago.

NOTE.—This species was made the type of a new genus, *Cystodictyon*, by J.E. Gray (1866:72). It was returned to *Anadyomene* by Heydrich (1894:283).

Anadyomene plicata C. Agardh

Anadyomene plicata C. Agardh, 1822a:400 [type locality: "Ravak" (Lawak), Waigeo I., Moluccas, Indonesia].—Gilbert, 1961:427.—Taylor, 1966b:349.—Trono, 1972a:94; 1973a:127, fig. 1; 1973c:9; 1975:29.—Velasquez, Trono, and Doty, 1975:128.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:10.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Zambales, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. CEBU (Mactan I.). PALAWAN. SULU: Sulu (Siasi I.), Tawitawi.

Anadyomene stellata (Wulfen) C. Agardh

Ulva stellata Wulfen in Jacquin, 1786:351 [type locality: Adriatic Sea]. *Anadyomene stellata* (Wulfen) C. Agardh, 1822a:400.—Gilbert, 1946:77;

1961:427.—Galutira and Velasquez, 1964:499.—Villones and Magdano, 1968:12, fig. 4.—Velasquez, 1971:432, fig. 12.—Reyes, 1972:140.—Velasquez et al., 1973:13, pl. 3: fig. 15.—Ortega, Alcala, and Reyes, 1974:187.—Velasquez, Trono, and Doty, 1975:128.—Reyes, 1978:149, pl. 5: fig. 6.—Hurtado-Ponce, 1983:108.—Hurtado-Ponce and Modelo, 1983:147.—Marcos-Anggarayngay, 1983:75, fig. 12.

Anadyomene flabellata Lamouroux, 1816:366, pl. XIV: fig. 3 [type locality: "Dans la Mousse de Corse des pharmaciens" (*Alsidium helminthochortos*)].—Dickie, 1876a:245.—Velasquez, Trono, and Doty, 1975:128.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Batangas, Albay. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental. SIKUIJOR. MINDANAO: Zamboanga. PALAWAN.

NOTE.—The synonymy was proposed by C. Agardh (1822a:400).

Anadyomene wrightii Harvey ex J.E. Gray

Anadyomene wrightii Harvey ex J.E. Gray, 1866:48, pl. XLIV: fig. 5 [type locality: Ryukyu-retto, Japan].—Gilbert, 1961:428.—Meñez, 1961:49.—Velasquez, Trono, and Doty, 1975:128.—Puig and Cordero, 1979:19.—Meñez and Calumpung, 1981:382.—Cordero, 1984a:74; 1984c:51.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan. MASBATE. LEYTE (Biliran I.). CENTRAL VISAYAS.

Microdictyon Decaisne

Microdictyon agardhianum Decaisne

Microdictyon agardhianum Decaisne, 1841:115 [type locality: Red Sea near Jidda, Saudi Arabia].—Reyes, 1972:140.—Velasquez et al., 1973:12, pl. 3: fig. 13.—Velasquez, Trono, and Doty, 1975:153.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. NEGROS: Negros Oriental.

Microdictyon boergesenii Setchell

Microdictyon boergesenii Setchell, 1925:106 [type locality: St. Jan (St. John), Virgin Is.].—Reyes, 1978:149, pl. 5: fig. 7.

PHILIPPINE DISTRIBUTION.—SIKUIJOR.

**Microdictyon clathratum* Martens

Microdictyon clathratum Martens, 1868:25, 66–67, pl. IV: fig. 1. [syntype localities: Ceram and Flores, Indonesia; Zamboanga, Mindanao].—De Toni, 1889:363.—Velasquez, Trono, and Doty, 1975:153.

PHILIPPINE DISTRIBUTION.—As above.

Microdictyon curtissiae W.R. Taylor

Microdictyon curtissiae W.R. Taylor, 1955:69, figs. 1–8, pl. I: fig. 2; pl. III [type locality: southeast coast of Florida, USA].—Westernhagen, 1973a:64; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Microdictyon japonicum Setchell

Microdictyon japonicum Setchell, 1925:107 [type locality: Tateyama, Chiba Prefecture, Japan].—Cordero, 1977b:29, pl. III: fig. 14.—Hurtado-Ponce, 1983:109.—Hurtado-Ponce and Modelo, 1983:147.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte.

Microdictyon okamurae Setchell

Microdictyon okamurae Setchell, 1925:107 ["Okamurai"] [type locality: Ryukyu-retto, Japan].—Cordero, 1977b:29, pl. III: fig. 13.

PHILIPPINE DISTRIBUTION.—BATANES.

Family CLADOPHORACEAE

Chaetomorpha Kützing

Chaetomorpha aerea (Dillwyn) Kützing

Conferva aerea Dillwyn, 1806 [1802–1809]: pl. 80 [syntype localities: various, in England and Wales].

Chaetomorpha aerea (Dillwyn) Kützing, 1849:379.—Velasquez, 1953a:100.—Reyes, 1972:140.—Velasquez, Trono, and Doty, 1975:133.—Trono and Fortes, 1980:63.—Fortes, 1981b:396.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:144.

PHILIPPINE DISTRIBUTION.—LUZON (southern). NEGROS: Negros Oriental.

NOTE.—Arguments for and against the conspecificity of *Chaetomorpha aerea* and *C. linum* have been presented from time to time. We follow Kornmann (1972) in recognizing separate species.

Chaetomorpha antennina (Bory de Saint-Vincent) Kützing

Conferva antennina Bory de Saint-Vincent, 1804a:381; 1804b:161, footnote [type locality: Réunion].

Chaetomorpha antennina (Bory de Saint-Vincent) Kützing, 1847a:166.—Gilbert, 1961:430.—Meñez, 1961:47.—Velasquez, Trono, and Doty, 1975:133.

Conferva media C. Agardh, 1824:100 [type locality: West Indies].

Chaetomorpha media (C. Agardh) Kützing, 1849:380.—Marcos-Anggarayngay, 1983:74, fig. 9.—Cordero, 1984a:75.—Marcos-Anggarayngay, 1984b:121.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Quezon.

NOTE.—The conspecificity of *Chaetomorpha antennina* and *C. media* is discussed by Børgesen (1940:37) and Gilbert (1961:430).

Chaetomorpha brachygona Harvey

Chaetomorpha brachygona Harvey, 1858:87, pl. XLVI:A [syntype localities: Key West, Florida, USA; mouth of Rio Bravo (Rio Grande), border of

Mexico and Texas, USA].—Gilbert, 1961:430.—Meñez, 1961:47.—Taylor, 1966b:344.—Velasquez, Trono, and Doty, 1975:133.—Cordero, 1976c:10; 1977b:21.—Reyes, 1978:149, pl. 5: fig. 3.—Chan, 1981:387.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Rizal, Manila. SIKUIJOR.

Chaetomorpha crassa (C. Agardh) Kützing

Conferva crassa C. Agardh, 1824:99 [syntype localities: Trieste and Venezia, Italy; England].

Chaetomorpha crassa (C. Agardh) Kützing, 1845:204.—Seale, 1911:309.—Wester, 1916:158; 1921:224; 1924:21.—G. Blanco, 1938:512.—Zaneveld, 1950:111.—Quisumbing, 1951:1008.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:8; 1959:94.—Gilbert, 1961:431.—Domantay, 1962:279.—Reyes, 1972:140.—Trono, 1972a:94.—Velasquez et al., 1973:10, pl. 1: fig. 4.—Westernhagen, 1973a:64; 1973b:369 (table 3); 1974:112 (table I).—Trono, 1975:28.—Velasquez, Trono, and Doty, 1975:133.—Cordero, 1976c:9, 10; 1977b:21.—Taylor, 1977b:8.—Reyes, 1978:148, 162, pl. 5: figs. 1, 2.—Tahil, 1978:52.—Cordero, 1979b:279.—Puig and Cordero, 1979:19.—Cordero, 1980b:21, pl. [60].—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:8.—Trono and Fortes, 1980:63.—Trono and Ganzon-Fortes, 1980:7, fig. [s.n.].—Chan, 1981:387, 389.—Cordero, 1981d:63.—Ganzon-Fortes, 1981:21.—Guzman, 1981:42, 48.—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:3, pl. II: fig. 3.—Calumpung, 1982:145.—Cordero, 1982a:60.—Trono and Fortes, 1982:144.—Hurtado-Ponce, 1983:106.—Hurtado-Ponce and Modelo, 1983:146.—Marcos-Anggarayngay, 1983:73, fig. 8.—Meñez, Phillips, and Calumpung, 1983:18.—Cordero, 1984a:75.—Marcos-Anggarayngay, 1984b:121.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, La Union, Pangasinan, Bataan, Manila, Batangas, Albay, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental (incl. Apo I.). CEBU (Mactan I.). SIKUIJOR. MINDANAO: Zamboanga. BASILAN. PALAWAN. SULU: Tawi-tawi.

Chaetomorpha gracilis Kützing

Conferva gracilis Kützing, 1843b:259 [type locality: Trieste, Italy].

Chaetomorpha gracilis Kützing, 1845:203.—Gilbert, 1961:432.—Velasquez et al., 1973:10, pl. 2: fig. 5.—Velasquez, Trono, and Doty, 1975:134.

PHILIPPINE DISTRIBUTION.—LUZON: Manila, Batangas. MINDORO: Occidental Mindoro (Lubang Is.).

NOTE.—*Conferva gracilis* Kützing, the intended basionym of *Chaetomorpha gracilis*, is a later homonym of *Conferva gracilis* Wulfen (1803:21), *C. gracilis* (Vaucher) De Candolle (in Lamarck and De Candolle, 1805:55), and *C. gracilis* Griffiths (in Harvey, 1834b:304) and hence is not priorable. *Chaetomorpha gracilis* Kützing is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN. This species was placed in the genus *Lola* by Chapman (1961:74).

Chaetomorpha inflata Kützing

Chaetomorpha inflata Kützing, 1849:378 [type locality: Java, Indonesia].—Martens, 1868:22, 58–59.—Gilbert, 1946:77; 1961:432.—Velasquez, Trono, and Doty, 1975:134.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga.

**Chaetomorpha kellersii* Howe

Chaetomorpha kellersii Howe, 1932:169, fig. 1 [type locality: "Panay Island"].—Gilbert, 1946:77; 1961:432.—Velasquez, Trono, and Doty, 1975:134.

PHILIPPINE DISTRIBUTION.—As above.

Chaetomorpha ligustica (Kützing) Kützing

Conferva ligustica Kützing, 1845:259 [type locality: Golfo di Genova, Italy].

Chaetomorpha ligustica (Kützing) Kützing, 1849:376.

Chaetomorpha tortuosa [misapplied name].—Taylor, 1966b:344.—Velasquez, Trono, and Doty, 1975:134.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.), Manila.

NOTE.—The name *Chaetomorpha tortuosa* (Dillwyn) Kützing, although often cited, is non-existent. In fact, Kützing (1845:205) transferred *Conferva tortuosa* Dillwyn (1805 [1802–1809]: pl. 46) to *Rhizoclonium* and established a new species, *R. capillare* Kützing (1847a:166), to accommodate Mediterranean populations that other workers had associated erroneously (in his opinion) with Dillwyn's plant. Still later, Kützing (1849:376) transferred *R. capillare* to *Chaetomorpha*, unfortunately changing the epithet to *tortuosa* and thus setting the stage for serious confusion. Two taxonomic synonyms listed by Ardissonne (1887 [1886–1887]: 209) have equal priority, *Conferva ligustica* Kützing (1843:259) and *Spongopsis mediterranea* Kützing (1843b:261), of which the former is herewith chosen to serve as the basionym of the correct name for this species.

Chaetomorpha linum (O.F. Müller) Kützing

Conferva linum O.F. Müller, 1778:7, pl. 771:2 [syntype localities: Nakskov and Rødbj, Denmark].

Chaetomorpha linum (O.F. Müller) Kützing, 1845:204.—Sulit, Navarro, and San Juan, 1952:170 (table 5).—Rabanal and Montalban, 1953:142.—Villadolid and Villaluz, 1953:5–10.—Villaluz, 1953:103.—Gilbert, 1961:432.—Rabanal and Montalban, 1961:3.—Taylor, 1966b:344.—Reyes, 1972:140.—Westernhagen, 1973a:64.—Ortega, Alcala, and Reyes, 1974:187.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:134.—Meñez and Calumpung, 1981:382.—Calumpung, 1982:145.—Hurtado-Ponce, 1983:107.—Hurtado-Ponce and Modelo, 1983:146.—Hurtado-Ponce, 1984:179.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Ilocos Sur, Rizal, Manila Bay, Albay. NEGROS: Negros Oriental. CEBU (Mactan I.).

***Chaetomorpha spiralis* Okamura**

Chaetomorpha spiralis Okamura, 1903:131 [type locality: Japan (Nemoto, Boshu Prov. [Chiba Prefecture] fide isotype in UC)].—Meñez and Calumpo, 1981:382.—Calumpo, 1982:145.

Chaetomorpha clavata Kützinger var. *torta* Farlow ex Collins, 1909:323 [type locality: San Diego, California, USA].

Chaetomorpha torta (Farlow ex Collins) Yendo, 1914:264.—Gilbert, 1961:433.—Domantay, 1962:279.—Velasquez, Trono, and Doty, 1975:134.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. NEGROS: Negros Occidental, Negros Oriental. MINDANAO: Zamboanga. BASILAN.

NOTE.—The synonymy was proposed by Abbott (1972:259).

Cladophora* Kützinger**Cladophora albida* (Nees) Kützinger**

Conferva albida Hudson, 1778:595 [type locality: England].

Annulina albida Nees, 1820: Index [1].

Cladophora albida (Nees) Kützinger, 1843b:267.—Domantay, 1962:279.—Velasquez, Trono, and Doty, 1975:135.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—*Conferva albida* Hudson, the intended basionym of *Cladophora albida*, is a later homonym of *Conferva albida* Forsskål (1775:xii) and hence not priorable. *Annulina albida* Nees is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Cladophora aokii* Yamada**

Cladophora aokii Yamada, 1925a:85, fig. III [type locality: Byobi-to, Taiwan].—Gilbert, 1961:429.—Taylor, 1966b:345.—Velasquez, Trono, and Doty, 1975:135.—Saraya and Trono, 1980:9, pl. I: fig. 4.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Bataan.

***Cladophora catenata* (Linnaeus) Kützinger**

Conferva catenata Linnaeus, 1753:1166 [syntype localities: "in mari Europam australem et Americam meridionalem"].

Cladophora catenata (Linnaeus) Kützinger, 1843b:271.

Cladophora fuliginosa Kützinger, 1849:415 [type locality: La Habana, Cuba].—Gilbert, 1961:429.—Meñez, 1961:46, pl. 2: figs. 17–19.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:135.—Cordero, 1977b:22, pl. I: figs. 3, 4.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Pangasinan. CEBU (Mactan I.).

NOTE.—The synonymy was proposed by van den Hoek (1963:123, footnote; 1982:59). Philippine records of this species were cited by van den Hoek (1982:61), but with an expression of uncertainty.

***Cladophora conferta* P. Crouan and H. Crouan**

Cladophora conferta P. Crouan and H. Crouan in Schramm and Mazé, 1865:37 [type locality: Guadeloupe].

Cladophora uncinata Børgesen, 1913:20, figs. 9, 10 [type locality: St. Croix, Virgin Is.].—Chan, 1981:387.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

NOTE.—The synonymy was proposed by van den Hoek (1982:174).

***Cladophora crispula* Vickers**

Cladophora crispula Vickers, 1905:56 [type locality: Barbados].—Meñez and Calumpo, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Cladophora crucigera* Grunow**

Cladophora crucigera Grunow, 1867:38, footnote [type locality: Guadeloupe].—Meñez and Calumpo, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

NOTE.—Van den Hoek (1982:39) did not see the type of this species, but thinks that the description suggests a robust plant of *C. vagabunda* whose ultimate branch systems have disappeared by sporulation.

***Cladophora crystallina* (Roth) Kützinger**

Conferva crystallina Roth, 1797:196 [type locality: near Wismar, East Germany].

Cladophora crystallina (Roth) Kützinger, 1843b:267.—Saraya and Trono, 1980:9.—Meñez and Calumpo, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CENTRAL VISAYAS.

***Cladophora cymopoliae* Børgesen**

Cladophora cymopoliae Børgesen, 1925:69, figs. 27–29 [type locality: Las Palmas, Gran Canaria, Islas Canarias].—Vannajan and Trono, 1977:43.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

***Cladophora dalmatica* Kützinger**

Cladophora dalmatica Kützinger, 1843b:268 [type locality: Split, Yugoslavia].—Meñez and Calumpo, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

Cladophora filipendula

Cladophora filipendula.—Westernhagen, 1973a:64; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

NOTE.—Westernhagen did not give an author for this

name and we have been unable to find its place of publication.

***Cladophora inserta* Dickie**

Cladophora inserta Dickie, 1876b:454 [type locality: Honolulu, Hawaiian Is.].—Chan, 1981:387, 389.—Trono and Ang, 1982:3.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PALAWAN (Bugsuk I.).

***Cladophora japonica* Yamada**

Cladophora japonica Yamada, 1931a:65, pl. XVI [syntype localities: Sagami and Kazusa provinces (Kanagawa and Chiba prefectures), Japan].—Cordero, 1977b:22, pl. I: fig. 5.

PHILIPPINE DISTRIBUTION.—BATANES.

***Cladophora laetevirens* (Dillwyn) Kützing**

Conferva laetevirens Dillwyn, 1805 [1802–1809]: pl. 48 [*“laete virens”*] [type locality: Swansea, Wales].
Cladophora laetevirens (Dillwyn) Kützing, 1843b:267.
Conferva heteronema C. Agardh, 1824:114 [type locality: Venezia, Italy].
Cladophora heteronema (C. Agardh) Kützing 1843b:265.—Westernhagen, 1973a:64; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

NOTE.—The synonymy was proposed by van den Hoek (1963:129).

***Cladophora liebetruthii* Grunow**

Cladophora liebetruthii Grunow in Piccone, 1884b:53 [type locality: Gran Canaria, Islas Canarias].—Fortes and Trono, 1980:55, fig. 4.—Chan, 1981:387.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro.

***Cladophora pellucida* (Hudson) Kützing**

Conferva pellucida Hudson, 1762:483 [type locality: Walney I., Lancashire, England].—Montagne, 1844a:658 [with query].—Velasquez, Trono, and Doty, 1975:138.
Cladophora pellucida (Hudson) Kützing, 1843b:271.—Martens, 1868:58–59 [with query].—Gilbert, 1946:77; 1961:429.—Domantay, 1962:279.—Velasquez, Trono, and Doty, 1975:135.
Conferva trichotoma C. Agardh, 1824:121 [type locality: Atlantic France].
Cladophora trichotoma (C. Agardh) Kützing, 1843b:271.—Cornejo and Velasquez, 1972:174, pl. 4: fig. 29.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:136.—Trono and Young, 1977:54.—Vannajan and Trono, 1977:40.—Chan, 1981:387.—Fortes, 1981b:396.—Hurtado-Ponce, 1983:108.—Hurtado-Ponce and Modelo, 1983:146.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Rizal, Cavite, Batangas. CATANDUANES. CEBU (Mactan I.).

NOTE.—The synonymy was proposed by van den Hoek (1963:215).

***Cladophora prolifera* (Roth) Kützing**

Conferva prolifera Roth, 1797:182, pl. III: fig. 2 [type locality: “in mare Corsicam”].
Cladophora prolifera (Roth) Kützing, 1843b:271.—Cordero, 1977b:22.—Meñez and Calumpang, 1981:382.
Cladophora rugulosa Martens, 1868:112, pl. II: fig. 3 [lectotype locality: Port Natal (Durban), South Africa fide Papenfuss, 1943a:80].—Marcos-Angarayngay, 1983:75, fig. 10.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. CENTRAL VISAYAS.

NOTE.—The synonymy was proposed by van den Hoek (1982:169).

****Cladophora quisumbingii* Manza**

Cladophora quisumbingii Manza, 1939:109 [type locality: Batan I., Batanes Prov., Luzon].—Taylor, 1966b:345, fig. 1.—Velasquez, Trono, and Doty, 1975:135.—Saraya and Trono, 1980:9, pl. I: fig. 1.
**Cladophora philippinensis* Manza, 1939:109 [type locality: Bawa, Cagayan Prov., Luzon].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Pangasinan.

NOTE.—Manza (1939:109) described *Cladophora philippinensis* and *C. quisumbingii* on the basis of specimens in the Bureau of Science, Manila. His publication was overlooked by Taylor, who studied Philippine algae including duplicates of the Bureau of Science collections in the Herbarium of the University of California, Berkeley. Seeing an apparently undescribed *Cladophora* labeled *C. quisumbingii* (without authorship) and believing that this name had not been published, Taylor (1966b:345) described it as a new species under that name. Because the holotype of *C. quisumbingii* Manza was destroyed during World War II, the isotype at Berkeley (UC 1402218) becomes the lectotype. The isotype of *C. philippinensis* Manza (UC 1402215), which is labeled with that name but without its author, similarly becomes the lectotype of its species. This specimen was included by Taylor in his circumscription of *C. quisumbingii*.

***Cladophora rupestris* (Linnaeus) Kützing**

Conferva rupestris Linnaeus, 1753:1167 [type locality: “in Europae marinis rupibus copiosissima”].
Cladophora rupestris (Linnaeus) Kützing, 1843b:270.—Cordero, 1976c:8; 1977b:23.—Marcos-Angarayngay, 1983:75, fig. 11.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte.

***Cladophora sakaii* Abbott**

Cladophora densa Harvey, 1860a:334 [type locality: “Hakodadi Bay” (Hakodate), Japan] [replaced name].—Cordero, 1984a:75.
Cladophora sakaii Abbott, 1972:259.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

NOTE.—*Cladophora sakaii* is a substitute name for *C.*

densa Harvey, a later homonym of *C. densa* (Roth) Kützing (1845:209).

***Cladophora sericea* (Hudson) Kützing**

Conferva sericea Hudson, 1762:485 [type locality: Isle of Sheppey, Kent, England].

Cladophora sericea (Hudson) Kützing, 1843b:264.

Conferva rudolphiana C. Agardh, 1827:636 [type locality: Trieste, Italy].

Cladophora rudolphiana (C. Agardh) Kützing, 1843b:268.—Hurtado-Ponce, 1983:107.—Hurtado-Ponce and Modelo, 1983:146.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

NOTE.—The synonymy was proposed by van den Hoek (1963:77).

***Cladophora sibogae* Reinbold**

Cladophora sibogae Reinbold, 1905:146 [syntype localities: Banda Is., Moluccas and Dongola (Donggala), Celebes, Indonesia].—Meñez and Calumpang, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Cladophora vagabunda* (Linnaeus) van den Hoek**

Conferva vagabunda Linnaeus, 1753:1167 [type locality: "in Mari Europaeo"].

Cladophora vagabunda (Linnaeus) van den Hoek, 1963:144.

Conferva fascicularis Mertens ex C. Agardh, 1824:114 [type locality: West Indies].

Cladophora fascicularis (Mertens ex C. Agardh) Kützing, 1843b:268.—Gilbert, 1961:429.—Reyes, 1972:141.—Ortega, Alcala, and Reyes, 1974:187.—Velasquez, Trono, and Doty, 1975:135.—Reyes, 1978:147, pl. 4: figs. 1, 2.

Cladophora mauritiana Kützing, 1849:399 [type locality: Mauritius].—Dickie, 1876a:244.—Gilbert, 1946:77; 1961:429 [with query].—Velasquez, Trono, and Doty, 1975:135.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Manila. NEGROS: Negros Oriental. SIKUIJOR. MINDANAO: Zamboanga. BASILAN.

NOTE.—The synonymy was proposed by van den Hoek (1982:137).

***Cladophora wrightiana* Harvey**

Cladophora wrightiana Harvey, 1860a:333 [type locality: Shimoda, Japan].—Hurtado-Ponce, 1983:108.—Hurtado-Ponce and Modelo, 1983:146.—Cordero, 1984a:75.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Rhizoclonium* Kützing**

***Rhizoclonium africanum* Kützing**

Rhizoclonium africanum Kützing, 1853:21, pl. 67: fig. II [type locality: "Senegambien" (Senegal or Gambia)].

Rhizoclonium hookeri [misapplied name fide Womersley and Bailey, 1970:

265].—Taylor, 1966b:334.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:161.—Meñez and Calumpang, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan. CENTRAL VISAYAS. CEBU (Mactan I.).

***Rhizoclonium crassipellitum* W. West and G.S. West
var. *robustum* G.S. West**

Rhizoclonium crassipellitum W. West and G.S. West var. *robustum* G.S. West, 1904:283 [type locality: Barbados].—Taylor, 1966b:344.—Velasquez, Trono, and Doty, 1975:161 [without designation of variety].

PHILIPPINE DISTRIBUTION.—LUZON: Rizal.

***Rhizoclonium grande* Børgesen**

Rhizoclonium grande Børgesen, 1935:14, figs. 5, 6 [type locality: Bombay, India].—Fortes and Trono, 1980:56.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

***Rhizoclonium kernerii* Stockmayer**

Rhizoclonium kernerii Stockmayer, 1890:582 [syntype localities: France; Scandinavia; North America].—Gilbert, 1961:430.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:161.—Reyes, 1978:149, pl. 5: figs. 4, 5.—Carumbana and Luchavez, 1980:189.

PHILIPPINE DISTRIBUTION.—LUZON: Laguna. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR.

***Rhizoclonium kochianum* Kützing**

Rhizoclonium kochianum Kützing, 1845:206 [syntype localities: North Sea, West Germany; Dubrovnik, Yugoslavia].—Westernhagen, 1973a:64; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Rhizoclonium riparium* (Roth) Harvey**

Conferva riparia Roth, 1806:216 [type locality: Norderney I., West Germany].

Rhizoclonium riparium (Roth) Harvey, 1849 [1847–1851]: pl. CCXXXVIII.—Westernhagen, 1973a:64; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Rhizoclonium setaceum* Kützing**

Rhizoclonium setaceum Kützing, 1847a:166 [type locality: Goes, Netherlands].—Gilbert, 1961:430.—Velasquez, Trono, and Doty, 1975:161.

PHILIPPINE DISTRIBUTION.—LUZON: Bataan.

Order SIPHONOCLADALES

Family SIPHONOCLADACEAE

Boergesenia J. Feldmann*Boergesenia forbesii* (Harvey) J. Feldmann

Valonia forbesii Harvey, 1860a:333 [syntype localities: Ryukyu-retto, Japan; Sri Lanka].

Boergesenia forbesii (Harvey) J. Feldmann, 1938:1503.—Gilbert, 1961:420.—Meñez, 1961:49, pl. 1: fig. 13.—Taylor, 1966b:347.—Villones and Magdamo, 1968:12, fig. 5.—Reyes, 1972:139.—Trono, 1972a:95; 1973b:216; 1973c:7, fig. 14.—Velasquez et al., 1973:13, pl. 4: fig. 17.—Trono, 1975:31.—Velasquez, Trono, and Doty, 1975:129.—Cordero, 1976c:8, 9, 10; 1977b:26.—Reyes, 1978:152, pl. 6: fig. 14.—Trono, 1978:3.—Trono and Tuason, 1978:3.—Cordero, 1979b:276.—Calumpung, 1980:143 (table 3).—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:12.—Trono and Ganzon-Fortes, 1980:9, fig. [s.n].—Chan, 1981:387.—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:3, pl. II: fig. 1.—Hurtado-Ponce, 1983:111.—Hurtado-Ponce and Modelo, 1983:147.—Marcos-Agngarayngay, 1983:76, fig. 13.—Cordero, 1984a:76.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Ilocos Norte, Pangasinan, Bataan, Batangas, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SIQUIJOR. MINDANAO: Zamboanga (incl. Sacol I.). BASILAN. PALAWAN. SULU: Sulu (Siasi I.), Tawitawi.

*Boodlea Murray and De Toni**Boodlea coacta* (Dickie) Murray and De Toni

Cladophora coacta Dickie, 1876b:451 [type locality: "Osima Harbour" (Oshima, Wakayama Prefecture), Japan].

Boodlea coacta (Dickie) Murray and De Toni in Murray, 1889:245.—Cordero, 1984a:73.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

Boodlea composita (Harvey) Brand

Conferva composita Harvey, 1834a:157 [type locality: Mauritius].

Boodlea composita (Harvey) Brand, 1904:187.—Gilbert, 1961:421.—Meñez, 1961:48, pl. 3: figs. 40–42.—Reyes, 1972:139.—Trono, 1972a:95.—Cordero, 1973b:17.—Trono, 1973c:6, fig. 18.—Ortega, Alcala, and Reyes, 1974:186, 187.—Trono, 1975:30.—Velasquez, Trono, and Doty, 1975:129.—Cordero, 1976c:10; 1977b:28, pl. II: fig. 9.—Reyes, 1978:153, pl. 7: fig. 1.—Trono, 1978:4.—Trono and Tuason, 1978:2.—Puig and Cordero, 1979:20.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:13.—Trono and Ganzon-Fortes, 1980:15, fig. [s.n].—Chan, 1981:387.—Fortes, 1981b:396.—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:4.—Trono and Ang, 1982:4.—Marcos-Agngarayngay, 1983:80, fig. 15.—Cordero, 1984a:73.

Boodlea siamensis Reinbold, 1901:191 [type locality: Ko Kahdat, Ko Chang Archipelago, Thailand].—Saraya and Trono, 1980:13.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Ilocos Sur, Pangasinan, Batan-

gas, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. LEYTE (Biliran I.). NEGROS: Negros Oriental. CEBU (Mactan I.). SIQUIJOR. MINDANAO: Zamboanga. BASILAN. PALAWAN (incl. Bugsuk I., Culion I.). SULU: Sulu (between Lapac I. and Siasi I.), Tawitawi.

NOTE.—*Boodlea siamensis* is included as a synonym on the authority of Børgesen (1946:16).

Boodlea montagnei (Harvey ex J.E. Gray) Egerod

Microdictyon montagnei Harvey ex J.E. Gray, 1866:69 [type locality: Tonga].—Gilbert, 1961:422, fig. 1.—Taylor, 1966b:349.—Velasquez, Trono, and Doty, 1975:153.

Boodlea montagnei (Harvey ex J.E. Gray) Egerod, 1952:332, footnote.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga. BASILAN. SULU: Sulu (Siasi I.), Tawitawi.

Boodlea struveoides Howe

Boodlea struveoides Howe, 1918:496 [type locality: Harrington Sound, Bermuda].—Saraya and Trono, 1980:12.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CENTRAL VISAYAS.

*Chamaedoris Montagne**Chamaedoris orientalis* Okamura and Higashi

Chamaedoris orientalis Okamura and Higashi in Okamura, 1931:98, pl. 10 [type locality: Kotosho (Hung-t'ou), Taiwan].—Gilbert and Doty, 1969:125, fig. 15.—Velasquez, Trono, and Doty, 1975:134.—Cordero, 1976c:8; 1977b:27, pl. II: figs. 10, 11.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Quezon.

*Cladophoropsis Børgesen**Cladophoropsis dichotoma* (Zanardini) Papenfuss

Spongodendron dichotomum Zanardini, 1878:38 [type locality: Wokam I., Aru Is., Indonesia].

Spongiocladia dichotoma (Zanardini) Murray and Boodle, 1888:175.—Taylor, 1966b:348.—Velasquez, Trono, and Doty, 1975:163.—Meñez and Calumpung, 1984:105.

Cladophoropsis dichotoma (Zanardini) Papenfuss, 1958:104.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. PALAWAN.

Cladophoropsis fasciculata (Kjellman) Wille

Siphonocladus fasciculatus Kjellman, 1897b:36, pl. 7: figs. 10–17 [type locality: Yokohama, Japan].

Cladophoropsis fasciculata (Kjellman) Wille, 1910 [1909–1910]:116.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

***Cladophoropsis gracillima* Dawson**

Cladophoropsis gracillima Dawson, 1950b:149, figs. 12, 13 [type locality: Punta Palmilla, Baja California Sur, Mexico].—Trono, 1973c:6.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. CENTRAL VISAYAS.

***Cladophoropsis membranacea* (C. Agardh) Børgesen**

Conserva membranacea C. Agardh, 1824:120 [type locality: "Ad insulam S. Crucis" (St. Croix, Virgin Is.)].

Cladophoropsis membranacea (C. Agardh) Børgesen, 1905:285, figs. 8–13.—Cordero, 1976c:10; 1977b:28.—Vannajan and Trono, 1977:43.—Reyes, 1978:151, pl. 6: figs. 5, 6.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Manila. SIKUIJOR.

***Cladophoropsis neocaledonica*
(Grunow ex Murray and Boodle) Papenfuss**

Spongocladia neocaledonica Grunow ex Murray and Boodle, 1888:175 [type locality: Poro, New Caledonia].—Trono, 1973d:5, pl. 1: fig. 1.—Saraya and Trono, 1980:13, pl. II: fig. 1.

Cladophoropsis neocaledonica (Grunow ex Murray and Boodle) Papenfuss, 1958:104.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

****Cladophoropsis philippinensis* W.R. Taylor**

Cladophoropsis philippinensis W.R. Taylor, 1961:58, figs. 1–6 [type locality: Little Santa Cruz I., near Zamboanga (city), Mindanao].—Taylor, 1966b:348.—Velasquez, Trono, and Doty, 1975:136.—Taylor, 1977b:9.

PHILIPPINE DISTRIBUTION.—MINDANAO: Zamboanga del Sur. BASILAN.

***Cladophoropsis sundanensis* Reinbold**

Cladophoropsis sundanensis Reinbold, 1905:147 [syntype localities: "Timor, Laut, etc.", Indonesia].—Weber-van Bosse, 1913a:77.—Gilbert, 1946:77; 1961:424.—Velasquez, Trono, and Doty, 1975:136.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

***Cladophoropsis vaucheriaeformis* (J.E. Areschoug)
Papenfuss**

Spongocladia vaucheriaeformis J.E. Areschoug, 1854:202, pl. II [type locality: Mauritius].—Gilbert, 1961:424.—Taylor, 1966b:348.—Velasquez, Trono, and Doty, 1975:163.—Saraya and Trono, 1980:14.

Cladophoropsis vaucheriaeformis (J.E. Areschoug) Papenfuss, 1958:104.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro. SULU: Tawitawi.

***Cladophoropsis zollingeri* (Kützinger) Reinbold**

Cladophora zollingeri Kützinger, 1849:415 [type locality: Java, Indonesia].
Cladophoropsis zollingeri (Kützinger) Reinbold, 1905:147.—Hurtado-Ponce, 1983:110.—Hurtado-Ponce and Modelo, 1983:147.—Cordero, 1984a:73.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

Struvea* Sonder**Struvea anastomosans* (Harvey) Piccone and Grunow ex Piccone**

Cladophora? *anastomosans* Harvey, 1859:pl. CI [type locality: Fremantle, Western Australia, Australia].

Struvea anastomosans (Harvey) Piccone and Grunow ex Piccone, 1884b:20.—Cordero, 1977b:30.—Reyes, 1978:153, pl. 7: fig. 2.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:13, pl. I: fig. 3.—Chan, 1981:387, 389.

Struvea delicatula Kützinger, 1866:1, pl. 2: figs. e–g [type locality: New Caledonia].—Gilbert, 1961:421.—Velasquez, Trono, and Doty, 1975:164.—Meñez and Calumpung, 1981:382.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. CEBU (Mactan I.). SIKUIJOR. MINDANAO: Zamboanga. BASILAN.

NOTE.—The conspecificity of *Struvea delicatula* and *S. anastomosans* was proposed by Murray and Boodle (1888:281), who, however, erroneously adopted the later name.

***Struvea ramosa* Dickie**

Struvea ramosa Dickie, 1874b:316 [type locality: Bermuda].—Westernhagen, 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Family VALONIACEAE***Dictyosphaeria* Decaisne ex Endlicher*****Dictyosphaeria cavernosa* (Forsskål) Børgesen**

Ulva cavernosa Forsskål, 1775:187 [syntype localities: "Gomfodae" (Al-Qunfidha), Saudi Arabia; Mokha, Yemen].

Dictyosphaeria cavernosa (Forsskål) Børgesen, 1932:2, pl. I: fig. 1.—Gilbert, 1946:77; 1961:417.—Meñez, 1961:48.—Domantay, 1962:280.—Taylor, 1966b:348.—Velasquez, 1971:432, fig. 11.—Reyes, 1972:139.—Trono, 1972a:95.—Cordero, 1973b:17.—Trono, 1973b:216; 1973c:7, fig. 13; 1973d:5, pl. 5: fig. 18.—Velasquez et al., 1973:12, pl. 3: fig. 11.—Ortega, Alcalá, and Reyes, 1974:185, 186, 187, 188.—Trono, 1975:31.—Velasquez, Trono, and Doty, 1975:140.—Cordero, 1976c:8, 10, 11; 1977b:27.—Trono and Young, 1977:54.—Reyes, 1978:151, pl. 6: fig. 9.—Trono, 1978:2.—Trono and Tuason, 1978:2.—Cordero, 1979b:276, 279.—Puig and Cordero, 1979:21.—Cordero, 1980b:22, pl. 7.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:10.—Chan, 1981:387.—Meñez and Calumpung, 1981:382.—Trono and De Lara, 1981:3, pl. II: fig. 2.—Cordero, 1982a:61.—Trono and Ang, 1982:3.—Hurtado-Ponce, 1983:110.—Hurtado-Ponce and Modelo, 1983:147.—Marcos-Anggarayngay,

1983:79, fig. 14.—Cordero, 1984a:72; 1984b:57.—Marcos-Agngar-ayngay, 1984b:121.

Valonia favulosa C. Agardh, 1822a:432 [type locality: "Ravak" (Lawak), Waigeo I., Moluccas, Indonesia].

Dictyosphaeria favulosa (C. Agardh) Decaisne ex Endlicher, 1843:18.—Dickie, 1876a:244.—Velasquez, Trono, and Doty, 1975:141.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan, Bataan, Batangas, Quezon, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. GUIMARAS. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR. MINDANAO: Zamboanga (incl. Sacol I.), Surigao del Sur, Davao. BASILAN. PALAWAN (incl. Balabac I., Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi (incl. Sibutu I., Turtle Is.).

NOTE.—The synonymy was proposed by Børgesen (1932:2).

***Dictyosphaeria cavernosa* (Forsskål) Børgesen
var. *bullata* Børgesen**

Dictyosphaeria cavernosa (Forsskål) Børgesen var. *bullata* Børgesen, 1952:5, figs. 1, 2 [type locality: Riabel, Mauritius].—Cordero, 1977b:28.

PHILIPPINE DISTRIBUTION.—BATANES.

***Dictyosphaeria intermedia* Weber-van Bosse**

Dictyosphaeria intermedia Weber-van Bosse, 1905:143 [type locality: Jangkar, Java, Indonesia].—Meñez, 1961:49.—Taylor, 1966b:348.—Velasquez, Trono, and Doty, 1975:141.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Pangasinan.

***Dictyosphaeria ocellata* (Howe) Olsen-Stojkovich**

Valonia ocellata Howe, 1920:603 [type locality: Watling's I., Bahama Is.].—Cordero, 1977b:25.

Dictyosphaeria ocellata (Howe) Olsen-Stojkovich, 1985b:62.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—Taylor (1960:111) considered the structure of this species to be intermediate between *Valonia* and *Dictyosphaeria*, "with more resemblance to solid forms of the latter genus." Olsen-Stojkovich assigned it to *Dictyosphaeria* on the basis of immunological distance data.

***Dictyosphaeria versluisii* Weber-van Bosse**

Dictyosphaeria versluisii Weber-van Bosse, 1905:144 ["*versluisii*"] [syntype localities: various, all in Indonesia].—Domantay, 1962:280.—Trono, 1973b:216; 1973c:8.—Velasquez, Trono, and Doty, 1975:141.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:11, pl. I: fig. 2.

Dictyosphaeria vanbosseae Børgesen, 1912:256, figs. 7–9 ["*van Bosseae*"] [type locality: Cane Bay, St. Croix, Virgin Is.].—Velasquez et al., 1973:12, pl. 3: fig. 12.

Dictyosphaeria setchellii Børgesen, 1940:12, figs. 1, 2a, 3a [type locality: Mauritius].—Gilbert, 1961:418.—Velasquez, Trono, and Doty, 1975:141.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Bataan, Batangas. MINDORO: Oriental Mindoro. CEBU (Mactan I.). BASILAN. SULU: Sulu (Siasi I.).

NOTE.—The synonymy was proposed by Valet (1966).

Ernodesmis Børgesen

***Ernodesmis verticillata* (Kützinger) Børgesen**

Valonia verticillata Kützinger, 1847a:165 [type locality: St. Croix, Virgin Is.].

Ernodesmis verticillata (Kützinger) Børgesen, 1912:259, figs. 10–12.—Reyes, 1978:151, pl. 6: figs. 7, 8.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

***Valonia* C. Agardh**

***Valonia aegagropila* C. Agardh**

Valonia aegagropila C. Agardh, 1822a:429 [lectotype locality: Venezia, Italy fide Egerod, 1952:348].—Gilbert, 1961:418.—Taylor, 1966b:347.—Reyes, 1972:139.—Trono, 1972a:95; 1973b:215; 1973c:8, fig. 16; 1973d:4, pl. 1: fig. 2.—Velasquez et al., 1973:11, pl. 3: fig. 10.—Ortega, Alcala, and Reyes, 1974:186, 188.—Trono, 1975:30.—Velasquez, Trono, and Doty, 1975:168.—Taylor, 1977b:8.—Reyes, 1978:152, pl. 6: fig. 13.—Trono, 1978:3.—Trono and Tuason, 1978:3.—Cordero, 1979b:276.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:11.—Trono and Ganzon-Fortes, 1980:11, fig. [s.n.].—Chan, 1981:387.—Guzman, 1981:42, 45.—Meñez and Calumpo, 1981:382.—Trono and De Lara, 1981:4, pl. II: fig. 4.—Hurtado-Ponce, 1983:111.—Hurtado-Ponce and Modelo, 1983:147.—Cordero, 1984a:72.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Bataan, Batangas, Sorsogon. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR. MINDANAO: Zamboanga (incl. Sacol I.). BASILAN. PALAWAN. SULU: Sulu (Siasi I.), Tawitawi.

***Valonia confervoides* Harvey ex J. Agardh**

Valonia confervoides Harvey ex J. Agardh, 1887:100 [syntype localities: Sri Lanka; Tonga].—Domantay, 1962:281.—Velasquez, Trono, and Doty, 1975:168.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Valonia fastigiata* Harvey ex J. Agardh**

Valonia fastigiata Harvey ex J. Agardh, 1887:101, pl. I: fig. 5 [syntype localities: Sri Lanka; Tonga].—Dickie, 1876a:245.—Gilbert, 1946:77; 1961:419.—Taylor, 1966b:347.—Velasquez, Trono, and Doty, 1975:168.—Saraya and Trono, 1980:11.—Meñez and Calumpo, 1981:382.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro. CENTRAL VISAYAS. MINDANAO: Zamboanga. BASILAN. SULU: Sulu (Siasi I.), Tawitawi (Sibutu I.).

***Valonia macrophysa* Kützing**

Valonia macrophysa Kützing, 1843b:307 [type locality: Hvar I., Yugoslavia].—Martens, 1868:25, 66–67.—Gilbert, 1946:77; 1961:420.—Velasquez, Trono, and Doty, 1975:168.—Meñez and Calumpung, 1981:382.—Cordero, 1984a:72.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. CENTRAL VISAYAS. MINDANAO: Zamboanga.

***Valonia utricularis* (Roth) C. Agardh**

Conferva utricularis Roth, 1797:160, pl. I: fig. 1 [type locality: Mediterranean Sea].

Valonia utricularis (Roth) C. Agardh, 1822a:431.—Martens, 1868:25, 66–67.—Dickie, 1876a:244.—Weber-van Bosse, 1913a:60.—Gilbert, 1947:77; 1961:420.—Domantay, 1962:282.—Velasquez, Trono, and Doty, 1975:168.—Cordero, 1976c:8, 9, 10; 1977b:25.—Saraya and Trono, 1980:12.—Meñez and Calumpung, 1981:382.—Cordero, 1984a:72.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan. CENTRAL VISAYAS. MINDANAO: Zamboanga.

***Valonia ventricosa* J. Agardh**

Valonia ventricosa J. Agardh, 1887:96 [syntype localities: St. Croix, Virgin Is.; Guadeloupe].—Meñez, 1961:48.—Domantay, 1962:282.—Taylor, 1966b:347.—Reyes, 1972:139.—Trono, 1972a:95.—Cordero, 1973b:17.—Trono, 1973c:8.—Ortega, Alcalá, and Reyes, 1974:185, 186, 187, 188.—Trono, 1975:30.—Velasquez, Trono, and Doty, 1975:168.—Reyes, 1978:152, pl. 6: fig. 10.—Trono, 1978:3.—Trono and Tuason, 1978:3.—Puig and Cordero, 1979:20.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:11.—Trono and Ganzon-Fortes, 1980:13, fig. [s.n].—Meñez and Calumpung, 1981:382.—Hurtado-Ponce, 1983:111.—Hurtado-Ponce and Modelo, 1983:147.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Batangas, Sorsogon. MINDORO: Oriental Mindoro. MARINDUQUE. LEYTE (Biliran I.). NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SQUIJOR. SULU: Tawitawi (incl. Sibutu I.).

***Valoniopsis* Børgesen**

***Valoniopsis pachynema* (Martens) Børgesen**

Bryopsis pachynema Martens, 1868:24, pl. IV: fig. 2 [syntype localities: Bengkulu and Pulau Tikus, Sumatra, Indonesia].

Valoniopsis pachynema (Martens) Børgesen, 1934:10, figs. 1, 2.—Gilbert, 1961:428.—Taylor, 1961:58; 1966b:347.—Westernhagen, 1973a:64; 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:168.—Cordero, 1977b:26.—Meñez and Calumpung, 1981:382.—Cordero, 1984a:74.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, La Union. MINDORO: Oriental Mindoro. CENTRAL VISAYAS. CEBU (Mactan I.). MINDANAO: Zamboanga. BASILAN.

Order BRYOPSIDALES

Family BRYOPSIDACEAE

***Bryopsis* Lamouroux**

***Bryopsis corticulans* Setchell**

Bryopsis corticulans Setchell in Collins, Holden, and Setchell, 1899: no. 626 [syntype localities: Carmel Bay and Pacific Grove, California, USA].—Westernhagen, 1973a:64; 1974:112 (table I).

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

***Bryopsis indica* A. Gepp and E.S. Gepp**

Bryopsis indica A. Gepp and E.S. Gepp, 1908:169, pl. 22: figs. 10, 11 [syntype localities: various, in Indian Ocean].—Gilbert, 1961:434.—Velasquez, Trono, and Doty, 1975:130.—Cordero, 1977b:31.—Vannajan and Trono, 1977:45, fig. 7.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cavite. MINDORO: Oriental Mindoro. CEBU (Mactan I.).

***Bryopsis pennata* Lamouroux**

Bryopsis pennata Lamouroux, 1809b:333 [type locality: Antilles].—Trono, 1975:32.—Reyes, 1978:153, pl. 7: fig. 3.—Liao and Sotto, 1980:96.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon. CEBU (Mactan I.). SQUIJOR.

***Bryopsis pennata* Lamouroux var. *secunda* (Harvey)
Collins and Hervey**

Bryopsis plumosa (Hudson) C. Agardh var. *secunda* Harvey, 1858:31, pl. XLV:A: figs. 1–3 [syntype localities: Key West and Sand Key, Florida, USA].

Bryopsis pennata Lamouroux var. *secunda* (Harvey) Collins et Hervey, 1917:62.—Gilbert, 1961:434.—Velasquez, Trono, and Doty, 1975:130 [without designation of variety].

PHILIPPINE DISTRIBUTION.—BASILAN.

***Bryopsis plumosa* (Hudson) C. Agardh**

Ulva plumosa Hudson, 1778:571 [type locality: Exmouth, Devonshire, England].

Bryopsis plumosa (Hudson) C. Agardh, 1822a:448.—Velasquez et al., 1973:13, pl. 4: fig. 16.—Vannajan and Trono, 1977:44, figs. 5, 6.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:14, pl. II: fig. 4.—Meñez and Calumpung, 1981:383.—Cordero, 1984a:76.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Rizal, Manila, Cavite, Batangas. CEBU (Mactan I.).

Derbesia* Solier**Derbesia attenuata* Funk**

Derbesia attenuata Funk, 1955:23 [type locality: Napoli, Italy].—Chan, 1981:387, 389.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Derbesia marina* (Lyngbye) Solier**

Vaucheria marina Lyngbye, 1819:79, pl. 22:A [sporophyte] [type locality: Kivig, Strømf, Faeroes].

Derbesia marina (Lyngbye) Solier, 1846:453.

Gastridium ovale Lyngbye, 1819:72, pl. 18:B [gametophyte] [syntype localities: various, all in Faeroes].

Halicystis ovalis (Lyngbye) J.E. Areschoug, 1850:447.—Domantay, 1962:281.—Velasquez, Trono, and Doty, 1975:147.—Reyes, 1978:152.—Saraya and Trono, 1980:14, pl. 11: fig. 2.

PHILIPPINE DISTRIBUTION (of gametophyte).—LUZON: Pangasinan. SQUIJOR.

NOTE.—Kornmann (1938) was the first to show that *Halicystis ovalis* and *Derbesia marina* are alternating stages. The sporophyte has not yet been reported from the Philippines.

***Derbesia tenuissima* (Moris and De Notaris) P. Crouan and H. Crouan**

Bryopsis tenuissima Moris and De Notaris, 1839:259, pl. VI: fig. III [type locality: Cabrera, Islas Baleares, Spain].

Derbesia tenuissima (Moris and De Notaris) P. Crouan and H. Crouan, 1867:133.—Cordero, 1976c:9; 1977b:31.

PHILIPPINE DISTRIBUTION.—BATANES.

NOTE.—J. Feldmann (1950) showed that *Derbesia tenuissima* alternates with *Halicystis parvula* Schmitz ex G. Murray (1893:50, pl. XIII: fig. 5). The gametophyte has not yet been reported from the Philippines.

Pedobesia* MacRaid and Womersley**Pedobesia ryukyuensis* (Yamada and Tanaka) Kobara and Chihara**

Derbesia ryukyuensis Yamada and Tanaka, 1938:64, fig. 5 [type locality: Pinai, Yonakuni-shima, Sakishima-gunto, Ryukyu-retto, Japan].—Cordero, 1976c:9; 1977b:31.

Pedobesia ryukyuensis (Yamada and Tanaka) Kobara and Chihara, 1984:156.

PHILIPPINE DISTRIBUTION.—BATANES.

Family CAULERPACEAE***Caulerpa* Lamouroux*****Caulerpa ambigua* Okamura**

Caulerpa ambigua Okamura, 1897:4, pl. I: figs. 3–12 [type locality: Ogasawara-gunto (Bonin Is.) Japan].—Saraya and Trono, 1980:15.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Caulerpa arenicola* W.R. Taylor**

Caulerpa arenicola W.R. Taylor, 1950:55, pl. 28: fig. 2 [type locality: Rongelap Atoll, Marshall Is.].—Meñez and Calumpang, 1981:383; 1982:5, pl. 1:H.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental. SQUIJOR.

***Caulerpa brachypus* Harvey**

Caulerpa brachypus Harvey, 1860a:333 [type locality: Tanega-shima, Osumi-gunto, Japan].—Gilbert, 1961:435.—Domantay, 1962:279.—Taylor, 1966b:350.—Kraft, 1972:328.—Trono, 1972a:95; 1973b:217; 1973d:6, pl. 3: fig. 9.—Cordero, 1974b:6, fig. 1.—Velasquez, Trono, and Doty, 1975:130.—Cordero, 1977c:25, 27, fig. 2.—Taylor, 1977a:4.—Reyes, 1978:153, pl. 7: fig. 4.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:17.—Meñez and Calumpang, 1981:383; 1982:5, pl. 1:I.—Trono and Ang, 1982:4.—Cordero, 1984c:51.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MABATE. SAMAR: Eastern Samar. PANAY: Antique (Panagatan Cays). NEGROS: Negros Occidental, Negros Oriental. CEBU (Mactan I.). SQUIJOR. MINDANAO: Zamboanga, Surigao del Norte. BASILAN. PALAWAN Bugsuk I., Cuyo I.). SULU: Sulu (incl. Siasi I.), Tawitawi (incl. Sibutu I., Tumindao I.).

***Caulerpa brachypus* Harvey f. *parvifolia* (Harvey) Cribb**

Caulerpa parvifolia Harvey, 1860b: pl. CLXXII [type locality: Kiama, New South Wales, Australia].—Gilbert, 1942:11; 1961:437.—Velasquez, Trono, and Doty, 1975:131.

Caulerpa brachypus Harvey f. *parvifolia* (Harvey) Cribb, 1958:209.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.).

***Caulerpa cupressoides* (Vahl) C. Agardh**

Fucus cupressoides Vahl, 1802:38 [type locality: St. Croix, Virgin Is.].

Caulerpa cupressoides (Vahl) C. Agardh, 1817:xxiii.—Domantay, 1962:278.—de los Reyes, 1967:231.—Villones and Magdamo, 1968:24, fig. 8.—Reyes, 1972:142.—Trono, 1972a:96.—Cordero, 1973b:19.—Trono, 1973c:9, fig. 22; 1973d:5, pl. 3: fig. 12; 1975:32.—Velasquez, Trono, and Doty, 1975:130.—Taylor, 1977a:4.—Reyes, 1978:155, pl. 8, fig. 7.—Trono, 1978:4.—Trono and Tuason, 1978:4.—Puig and Cordero, 1979:23.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:17.—Meñez and Calumpang, 1982:6, pl. 1:B,C.—Trono and Ang, 1982:4.—Marcos-Agngarayngay, 1983:83, fig. 16.—Cordero, 1984a:76.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Quezon, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. MARINDUQUE. SAMAR: Eastern Samar. LEYTE (Biliran I.). NEGROS: Negros Oriental. CEBU (Mactan I.). SQUIJOR. MINDANAO: Zamboanga. PALAWAN (Bugsuk I.). SULU: Sulu (incl. Siasi I.), Tawitawi.

***Caulerpa cupressoides* (Vahl) C. Agardh
var. *ericifolia* (Turner) Weber-van Bosse**

Fucus ericifolius Turner, 1808:124, pl. 56 [type locality: Bermuda].

Caulerpa cupressoides (Vahl) C. Agardh var. *ericifolia* (Turner) Weber-van Bosse, 1898:335.—Domantay, 1962:278.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Caulerpa cupressoides* (Vahl) C. Agardh
var. *lycopodium* Weber-van Bosse**

Caulerpa lycopodium J. Agardh, 1847:6 [syntype localities: Brazil; West Indies].

Caulerpa cupressoides (Vahl) C. Agardh var. *lycopodium* Weber-van Bosse, 1898:335.—Hurtado-Ponce, 1983:115.—Hurtado-Ponce and Modelo, 1983:148.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

NOTE.—*Caulerpa lycopodium* J. Agardh, the intended basionym of *C. cupressoides* var. *lycopodium*, is a later homonym of *C. lycopodium* C. Agardh (1817:xxiii) and hence not priorable. The Weber-van Bosse trinomial is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Caulerpa cupressoides* (Vahl) C. Agardh
var. *lycopodium* Weber-van Bosse
f. *amicorum* (Harvey) Weber-van Bosse**

Caulerpa amicum Harvey, 1860a:333 [type locality: Oshima, Amami-gunto, Ryukyu-retto, Japan].

Caulerpa cupressoides (Vahl) C. Agardh var. *lycopodium* Weber-van Bosse f. *amicorum* (Harvey) Weber-van Bosse, 1898:337.—Gilbert, 1942:17.—Trono, 1973c:9.—Meñez and Calumpung, 1981:383.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. CENTRAL VISAYAS.

***Caulerpa cupressoides* (Vahl) C. Agardh
var. *lycopodium* Weber-van Bosse
f. *disticha* Weber-van Bosse**

Caulerpa cupressoides (Vahl) C. Agardh var. *lycopodium* Weber-van Bosse f. *disticha* Weber-van Bosse, 1898:338, pl. XXVII: fig. 14 [syntype localities: Guadeloupe; Florida, USA].

Caulerpa cupressoides (Vahl) C. Agardh var. *disticha* Weber-van Bosse, 1898:327, 328.—Gilbert, 1961:436.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. MINDANAO: Zamboanga. BASILAN.

NOTE.—*Caulerpa cupressoides* var. *lycopodium* f. *disticha* and *C. cupressoides* var. *disticha* are alternative names for the same taxon, both being used by Weber-van Bosse in the original publication.

***Caulerpa cupressoides* (Vahl) C. Agardh
var. *lycopodium* Weber-van Bosse
f. *elegans* (P. Crouan and H. Crouan) Weber-van Bosse**

Caulerpa plumaris (Forsskål) C. Agardh var. *elegans* P. Crouan and H. Crouan in Schramm and Mazé, 1865:39 [type locality: Guadeloupe].

Caulerpa cupressoides (Vahl) C. Agardh var. *lycopodium* Weber-van Bosse f. *elegans* (P. Crouan and H. Crouan) Weber-van Bosse, 1898:336.—Cordero, 1977b:32.

PHILIPPINE DISTRIBUTION.—BATANES.

***Caulerpa elongata* Weber-van Bosse**

Caulerpa elongata Weber-van Bosse, 1898:271, pl. XXI: figs. 5, 6 [syntype localities: Tongatapu, Tonga; Macassar, Celebes, Indonesia].—Taylor, 1977a:5.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon.

***Caulerpa fastigiata* Montagne**

Caulerpa fastigiata Montagne, 1837:353 [type locality: Cuba].—Gilbert, 1942:9; 1961:436.—Velasquez, Trono, and Doty, 1975:131.—Taylor, 1977a:5.—Reyes, 1978:154, pl. 8: figs. 1, 2.—Meñez and Calumpung, 1981:383; 1982:6, pl. 1:A.

PHILIPPINE DISTRIBUTION.—MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SAMAR: Eastern Samar. NEGROS: Negros Occidental (incl. Suyac I.), Negros Oriental (incl. Apo I.). SIKUIJOR. MINDANAO: Zamboanga. BASILAN.

***Caulerpa fergusonii* Murray**

Caulerpa fergusonii Murray, 1891:212, pl. 53: figs. 1, 2 [type locality: Sri Lanka].—Taylor, 1977a:5.—Cordero, 1980b:23, pls. 8, [46].—Hurtado-Ponce, 1983:115.—Hurtado-Ponce and Modelo, 1983:148.—Hurtado-Ponce, 1984:179.—Tungpalan, 1984:139.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Sorsogon. SIKUIJOR.

***Caulerpa filicoides* Yamada**

Caulerpa filicoides Yamada, 1936b:135, pl. 30: fig. 2 [syntype localities: Mikako and Naha, Ryukyu-retto, Japan].—Saraya and Trono, 1980:15, pl. III: figs. 1, 4.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

***Caulerpa lentillifera* J. Agardh**

Caulerpa lentillifera J. Agardh, 1837:173 [type locality: Ethiopia].—Gilbert, 1942:23; 1961:436.—Domantay, 1962:277.—Taylor, 1966b:350 [var. *lentillifera*].—Villones and Magdamo, 1968:24, fig. 7.—Trono, 1972a:96; 1973b:217; 1973c:10, fig. 1; 1973d:5, pl. 5: fig. 20; 1975:33.—Velasquez, Trono, and Doty, 1975:131.—Taylor, 1977a:5.—Reyes, 1978:155, 162, pl. 8: fig. 6.—Trono, 1978:4.—Trono and Tuason, 1978:3.—Cordero, 1979b:276.—Fortes, 1979:112, figs. 1, 2.—Liao and Sotto, 1980:96.—Moreland,

1980:43.—Saraya and Trono, 1980:16.—Trono and Fortes, 1980:63.—Trono and Ganzon-Fortes, 1980:17, fig. [s.n].—Ganzon-Fortes, 1981:21.—Meñez and Calumpong, 1981:383.—Trono, 1981a:49.—Calumpong, 1982:145.—Luistro, Cajipe, and Laserna, 1982:46.—Meñez and Calumpong, 1982:7, pl. 1:F,G.—Trono and Fortes, 1982:144.—Trono and Ganzon-Fortes, 1985:64, 66.

Caulerpa lentillifera J. Agardh var. *longistipitata* Weber-van Bosse in Reinbold, 1901:189 [syntype localities: Ko Chick, Ko Chang Archipelago, Thailand; various in Indonesia].—Taylor, 1966b:350.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Batangas, Camarines Norte, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. MARINDUQUE. SAMAR: Eastern Samar. PANAY: Aklan. NEGROS: Negros Oriental. CEBU (incl. Mactan I.). SIKUIJOR. MINDANAO: Zamboanga (incl. Sacol I.), Misamis Occidental, Davao. BASILAN. PALAWAN. SULU: Sulu (incl. Siasi I.), Tawitawi (incl. Sibutu I., Turtle Is.).

NOTE.—The synonymy was proposed by Nizamuddin (1967:158).

****Caulerpa lentillifera* J. Agardh var. *compacta*
Trono and Ang**

Caulerpa lentillifera J. Agardh var. *compacta* Trono and Ang, 1982:7, figs. 1–4 [type locality: Bugsuk I., Palawan Prov.].

PHILIPPINE DISTRIBUTION.—As above.

***Caulerpa lessonii* Bory de Saint-Vincent**

Caulerpa lessonii Bory de Saint-Vincent, 1828 [1826–1829]:193, pl. 22: fig. 3 [type locality: Oualan (Kosrae) I., Caroline Is.].—Taylor, 1977a:6.

PHILIPPINE DISTRIBUTION.—LUZON: La Union, Pangasinan.

***Caulerpa mexicana* Sonder ex Kützing**

Caulerpa mexicana Sonder ex Kützing, 1849:496 [type locality: Mexico].—Taylor, 1966b:350.—Velasquez, Trono, and Doty, 1975:131.—Taylor, 1977a:7.—Trono and Ang, 1982:5.

Caulerpa taxifolia (Vahl) C. Agardh var. *crassifolia* C. Agardh, 1822a:436 [syntype localities: Indian Ocean; Red Sea; West Indies].

Caulerpa crassifolia (C. Agardh) J. Agardh, 1873:13.—Weber-van Bosse, 1913a:99 [f. *typica*].—Gilbert, 1942:12; 1946:78.—Gilbert, 1961:436.—Meñez, 1961:53.—Velasquez, Trono, and Doty, 1975:130.—Meñez and Calumpong, 1981:383; 1982:6, pl. 1:D,E.

PHILIPPINE DISTRIBUTION.—LUZON: La Union, Pangasinan, Sorsogon. NEGROS: Negros Oriental. PALAWAN (incl. Balabac I., Bugsuk I.). SULU: Tawitawi (Sangasiapu I.).

NOTE.—The synonymy was proposed by Papenfuss (1956:65). *Caulerpa crassifolia* has priority only from 1873, the basionym being at varietal rank.

***Caulerpa mexicana* Sonder ex Kützing
var. *pluriseriata* W.R. Taylor**

Caulerpa mexicana Sonder ex Kützing var. *pluriseriata* W.R. Taylor, 1975:77, fig. 1 [including Philippine records] [type locality: Tatanan I., Malaysia].

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. SIKUIJOR.

***Caulerpa microphysa* (Weber-van Bosse) J. Feldmann**

Caulerpa racemosa (Forsskål) J. Agardh var. *clavifera* (Turner) Weber-van Bosse f. *microphysa* Weber-van Bosse, 1898:361, pl. XXXIII: fig. 5 [type locality: Macassar, Celebes, Indonesia].—Cordero, 1984c:52.

Caulerpa microphysa (Weber-van Bosse) J. Feldmann, 1955:430.—Taylor, 1966b:350.—Velasquez, Trono, and Doty, 1975:131.—Meñez and Calumpong, 1981:383.—Calumpong, 1982:145.—Meñez and Calumpong, 1982:7, pl. 2:L.

PHILIPPINE DISTRIBUTION.—MASBATE. NEGROS: Negros Oriental (incl. Apo I.). CEBU (Pescador I., Sumilon I.). SIKUIJOR. MINDANAO: Zamboanga (incl. Sacol I.). BASILAN.

***Caulerpa prolifera* (Forsskål) Lamouroux**

Fucus prolifer Forsskål, 1775:193 [type locality: Alexandria, Egypt].

Caulerpa prolifera (Forsskål) Lamouroux, 1809b:332.—Ortega, Alcalá, and Reyes, 1974:185.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental.

***Caulerpa racemosa* (Forsskål) J. Agardh**

Fucus racemosus Forsskål, 1775:191 [type locality: Suez, Egypt].

Caulerpa racemosa (Forsskål) J. Agardh, 1873:35.—Gilbert, 1946:78.—Zaneveld, 1950:110.—Velasquez, 1953a:100.—Zaneveld, 1956:6; 1959:92.—Meñez, 1961:51.—Taylor, 1966b:350.—de los Reyes, 1967:231.—Velasquez, 1968a:119, fig. 1.—Villones and Magdamo, 1968:12, fig. 6.—Velasquez, 1971:435, fig. 13.—Kraft, 1972:328, 329.—Reyes, 1972:142.—Trono, 1972a:96.—Velasquez, 1972:63.—Bersamin et al., 1973:185.—Trono, 1973b:218.—Trono, 1973d:6, pl. 2: figs. 7, 8; pl. 4: figs. 13–16.—Velasquez et al., 1973:14, pl. 4: fig. 20.—Westernhagen, 1973a:64.—Ortega, Alcalá, and Reyes, 1974:178.—Westernhagen, 1974:112 (table I).—Trono, 1975:33.—Velasquez, Trono, and Doty, 1975:131.—Cordero, 1976c:6 [var. *racemosa*]; 1977b:34 [var. *racemosa*].—Taylor, 1977a:8.—Reyes, 1978:156, 162, pl. 8: fig. 8; pl. 9: figs. 1–4.—Sotto, 1978:109.—Trono, 1978:5.—Trono and Tuason, 1978:3.—Cordero, 1979b:276, 280.—Fortes, 1979:112, fig. 3.—Puig and Cordero, 1979:23.—Velasquez, 1979b:230.—Cordero, 1980b:24, pl. 10; 26, pls. 13, [57] [var. *racemosa*].—Liao and Sotto, 1980:96.—Moreland, 1980:43, 46.—Saraya and Trono, 1980:16.—Trono and Fortes, 1980:63.—Trono and Ganzon-Fortes, 1980:19, fig. [s.n].—Trono, Velasquez, and Guevarra, 1980:76.—Ganzon-Fortes, 1981:21.—Guzman, 1981:43.—Trono and De Lara, 1981:4.—Calumpong, 1982:145.—Meñez and Calumpong, 1982:7.—Trono and Ang, 1982:6.—Trono and Fortes, 1982:144.—Marcos-Agngarayngay, 1983:84, fig. 17.—Cordero, 1984a:77; 1984b:58; 1984c:51.—Marcos-Agngarayngay, 1984b:121.—Tungpalan, 1984:139.—Trono and Ganzon-Fortes, 1985:64, 66.

Fucus clavifer Turner, 1808:126, pl. 57 [type locality: Red Sea].

Caulerpa clavifera (Turner) C. Agardh, 1817:xxiii.—Dickie, 1874a:197;

1876a:244.—Howe, 1932:169.—Velasquez, Trono, and Doty, 1975:130.

Chauvinia clavifera (Turner) Bory de Saint-Vincent, 1829 [1826–1829]: 207.—Martens, 1868:24, 64–65.—Velasquez, Trono, and Doty, 1975:134.

Caulerpa racemosa (Forsskål) J. Agardh var. *clavifera* (Turner) Weber-van Bosse, 1898:361, pl. XXXIII: figs. 1–3.—Gilbert, 1942:18; 1946:78.—Quisumbing, 1951:1007.—Gilbert, 1961:437.—Galutira and Velasquez, 1964:496.—Taylor, 1966b:351.—Aguilar-Santos and Doty, 1968:174.—Taylor, 1977a:10.—Meñez and Calumpong, 1981:383.—Cordero, 1982a:60, fig. 5.—Meñez and Calumpong, 1982:7, pl. 2:A.—Hurtado-Ponce, 1983:115.—Hurtado-Ponce and Modelo, 1983:148.—Cordero, 1984c:52.—Hurtado-Ponce, 1984:179.

Fucus uvifer Turner, 1816 [1815–1819]:81, pl. 230 [type locality: Red Sea].

Caulerpa uvifera C. Agardh, 1817:xxiii.

Caulerpa racemosa (Forsskål) J. Agardh var. *uvifera* (C. Agardh) J. Agardh, 1873:35.—Collado, 1926:129.—G. Blanco, 1938:512.—Gilbert, 1942:20.—Zaneveld, 1950:110.—Quisumbing, 1951:1008.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:7; 1959:93.—Gilbert, 1961:440.—Bersamin et al., 1973:185.—Cordero, 1980b:27, pl. 15.—Meñez and Calumpong, 1981:383; 1982:9, pl. 2:D.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Ilocos Sur, La Union, Pangasinan, Bataan, Batangas, Quezon, Albay, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. MASBATE. SAMAR: Western Samar, Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan, Antique (incl. Panagatan Cays). NEGROS: Negros Occidental (Ilacon I., Suyac I.), Negros Oriental (incl. Apo I.). CEBU (incl. Mactan I., Pescador I., Sumilon I.). SIKUIJOR. MINDANAO: Zamboanga (incl. Sacol I.), Misamis Occidental, Surigao del Norte, Davao. BASILAN. PALAWAN (incl. Balabac I., Bugsuk I., Cuyo I.). SULU: Sulu (incl. Cagayan Sulu I., Siasi I.), Tawitawi (incl. Sibutu I., Tumindao I., Turtle Is.).

NOTE.—The synonymy was proposed by Papenfuss and Egerod (1957:88). *Fucus uvifer* Turner, the intended basionym of *Caulerpa uvifera* (and other combinations), is a later homonym of *F. uvifer* Forsskål (1775:192) and hence not priorable. *Caulerpa uvifera* C. Agardh is treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

***Caulerpa racemosa* (Forsskål) J. Agardh
var. *corynephora* (Montagne) Weber-van Bosse**

Caulerpa corynephora Montagne, 1842a:14 [type locality: Toud I. (Warrior Islet), Torres Strait, Australia].

Caulerpa racemosa (Forsskål) J. Agardh var. *corynephora* (Montagne) Weber-van Bosse, 1898:364, pl. XXXIII: figs. 10–13.—Gilbert, 1942:20; 1961:438.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Caulerpa racemosa* (Forsskål) J. Agardh
var. *gracilis* (Zanardini) Weber-van Bosse**

Caulerpa clavifera (Turner) C. Agardh var. *gracilis* Zanardini, 1851:37 [type locality: Tor, Sinai Peninsula, Egypt].

Caulerpa racemosa (Forsskål) J. Agardh var. *gracilis* (Zanardini) Weber-van Bosse, 1898:370.—Gilbert, 1942:21; 1961:438.

PHILIPPINE DISTRIBUTION.—Locality not specified.

***Caulerpa racemosa* (Forsskål) J. Agardh
var. *laetevirens* (Montagne) Weber-van Bosse**

Caulerpa laetevirens Montagne, 1842a:13 [type locality: Toud I. (Warrior Islet), Torres Strait, Australia].—Piccone, 1886:29, 89.—Velasquez, Trono, and Doty, 1975:131.

Caulerpa racemosa (Forsskål) J. Agardh var. *laetevirens* (Montagne) Weber-van Bosse, 1898:366, pl. XXXII: figs. 16–22.—Gilbert, 1942:21; 1946:78.—Zaneveld, 1950:110; 1956:7; 1959:93.—Gilbert, 1961:438.—Taylor, 1966b:351.—Kraft, 1972:328.—Cordero, 1976c:6, 8; 1977b:33.—Taylor, 1977a:10.—Cordero, 1980b:25, pl. 11; 1984c:52.

PHILIPPINE DISTRIBUTION.—BATANES. MASBATE (incl. Ticao I.). PANAY: Antique (Panagatan Cays). CEBU (incl. Olango I.). SIKUIJOR. MINDANAO: Zamboanga. BASILAN. SULU: Tawitawi (Bilitan I., Sibutu I.).

***Caulerpa racemosa* (Forsskål) J. Agardh
var. *lamourouxii* (Turner) Weber-van Bosse**

Fucus lamourouxii Turner, 1816 [1815–1819]:79, pl. 229 [type locality: Red Sea].

Caulerpa racemosa (Forsskål) J. Agardh var. *lamourouxii* (Turner) Weber-van Bosse, 1898:368, pl. XXXII: figs. 1–7; pl. XXXIII: fig. 15.—Gilbert, 1961:438.—Taylor, 1977a:10.—Cordero, 1978b:47, fig. 3; 1980b:26, pl. 12.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.). MINDANAO: Zamboanga, Surigao del Sur.

***Caulerpa racemosa* (Forsskål) J. Agardh
var. *macra* Weber-van Bosse**

Caulerpa racemosa (Forsskål) J. Agardh var. *macra* Weber-van Bosse, 1913a:106, fig. 26 [syntype localities: Moluccas, Indonesia: Fau Islet, Gebe I.; Majalibit Bay, Waigeo I.].—Gilbert, 1942:20; 1961:439.

PHILIPPINE DISTRIBUTION.—PALAWAN (Culion I.).

***Caulerpa racemosa* (Forsskål) J. Agardh var. *macrophysa*
(Sonder ex Kützinger) Taylor**

Chauvinia macrophysa Sonder ex Kützinger, 1857:6, pl. 15: fig. II [type locality: Central America].

Caulerpa racemosa (Forsskål) J. Agardh var. *macrophysa* (Sonder ex Kützinger) Taylor, 1928:101, pl. 12: fig. 3; pl. 13: fig. 9.—Gilbert, 1942:19; 1961:439.—Domantay, 1962:277.—Taylor, 1966b:351.—Trono, 1973c:11, fig. 3.—Meñez and Calumpong, 1981:383; 1982:8, pl. 2:C.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental. CEBU. SIKUIJOR. MINDANAO: Zamboanga. BASILAN. SULU: Sulu (North Ubian I.).

***Caulerpa racemosa* (Forsskål) J. Agardh
var. *occidentalis* (J. Agardh) Børgesen**

Caulerpa chemnitzia (Esper) Lamouroux var. *occidentalis* J. Agardh, 1873:37 [type locality: upper Gulf of Mexico to Recife, Brazil].
Caulerpa racemosa (Forsskål) J. Agardh var. *occidentalis* (J. Agardh) Børgesen, 1907:379, figs. 28, 29.—Domantay, 1962:278.—Taylor, 1966b:351.—Taylor, 1977a:10.—Meñez and Calumpong, 1981:383; 1982:8, pl. 2:B.—Cordero, 1984c:51.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Sur, Pangasinan, Rizal, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. MARINDUQUE. MASBATE. NEGROS: Negros Oriental. SIKUIJOR. MINDANAO: Zamboanga. BASILAN. PALAWAN. SULU: Sulu (Tapul Group).

***Caulerpa racemosa* (Forsskål) J. Agardh
var. *peltata* (Lamouroux) Eubank**

Caulerpa peltata Lamouroux, 1809b:332 [type locality: Antilles].—Dickie, 1876a:244.—Collado, 1926:129.—Gilbert, 1942:22 [var. *typica*]; 1946:78.—Taylor, 1966b:350 [var. *peltata*].—de los Reyes, 1967:231.—Reyes, 1972:142.—Velasquez et al., 1973:14, pl. 4: fig. 18.—Ortega, Alcalá, and Reyes, 1974:186, 187.—Trono, 1975:33.—Velasquez, Trono, and Doty, 1975:131.—Cordero, 1976a:84; 1976c:8.—Taylor, 1977a:8.—Cordero, 1978b:45, fig. 2 [var. *typica*].—Reyes, 1978:156, pl. 9: fig. 5.—Cordero, 1979b:280, fig. 2 [var. *typica*]; 1980b:23, pl. 9 [var. *typica*].—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:15, pl. II: fig. 3.—Trono and Fortes, 1980:63.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:144.—Cordero, 1984a:77; 1984c:51.—Marcos-Anggarayngay, 1984b:121.
Caulerpa racemosa (Forsskål) J. Agardh var. *peltata* (Lamouroux) Eubank, 1946:421, fig. 2r,s.—Gilbert, 1961:439.—Cordero, 1977b:33.—Meñez and Calumpong, 1981:383; 1982:8, pl. 2:K.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Ilocos Sur, Pangasinan, Batangas, Albay, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. MASBATE. SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental (incl. Apo I.). CEBU (incl. Mactan I., Pescador I., Sumilon I.). SIKUIJOR. MINDANAO: Zamboanga, Surigao del Norte. BASILAN. PALAWAN (incl. Cuyo I.). SULU: Sulu (incl. North Ubian I., Siasi I.), Tawitawi (incl. Tumindao I.).

NOTE.—Shameel (1978) argues for retention of *C. peltata* as a distinct species.

TAXA OF UNCERTAIN VALUE

The following two infraspecific taxa are probably related to *Caulerpa racemosa* but have not been formally transferred to it.

***Caulerpa peltata* Lamouroux var. *macrodisca* (Decaisne)
Weber-van Bosse**

Caulerpa macrodisca Decaisne, 1842a:336 [type locality: Anambas Is., Indonesia].—Howe, 1932:169.—Velasquez, Trono, and Doty, 1975:131.—Taylor, 1977a:7.

Caulerpa peltata Lamouroux var. *macrodisca* (Decaisne) Weber-van Bosse, 1898:376.—Gilbert, 1942:23.—Zaneveld, 1950:110.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:6; 1959:92.

PHILIPPINE DISTRIBUTION.—PANAY. CEBU.

***Caulerpa peltata* Lamouroux var. *nummularia*
(Harvey ex J. Agardh) Weber-van Bosse**

Caulerpa nummularia Harvey ex J. Agardh, 1873:38 [syntype localities: Tonga; Nukahiva, Marquesas Is.].
Caulerpa peltata Lamouroux var. *nummularia* (Harvey ex J. Agardh) Weber-van Bosse, 1898:376, pl. XXXII: fig. 9.—Cordero, 1976a:84, fig. 1; 1976c:6; 1977b:32.

PHILIPPINE DISTRIBUTION.—BATANES.

***Caulerpa racemosa* (Forsskål) J. Agardh
var. *turbinata* (J. Agardh) Eubank**

Caulerpa clavifera (Turner) C. Agardh var. *turbinata* J. Agardh, 1837:173 [type locality: near Tor, Sinai Peninsula, Egypt].
Caulerpa racemosa (Forsskål) J. Agardh var. *turbinata* (J. Agardh) Eubank, 1946:420, figs. 2o–q.—Taylor, 1977a:10.—Cordero, 1980b:27, pl. 14.
Fucus chemnitzia Esper, 1800:167 [given as "127"], pl. LXXXVIII [type locality: Malabar Coast, India].
Caulerpa racemosa (Forsskål) J. Agardh var. *chemnitzia* (Esper) Weber-van Bosse, 1898:370, pl. XXXI: figs. 5–8.—Gilbert, 1961:437.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon. SAMAR: Eastern Samar. BASILAN. SULU: Sulu.

NOTE.—The synonymy was proposed by Weber-van Bosse (1898:370).

****Caulerpa reyesii* Meñez and Calumpong**

Caulerpa reyesii Meñez and Calumpong, 1982:10, fig. 2, pl. 3:C–I [type locality: Solong-on, Siquijor I.].—Reyes, 1978:157, pl. 9: figs. 6, 7 [*Caulerpa* sp.].

PHILIPPINE DISTRIBUTION.—As above.

***Caulerpa selago* (Turner) C. Agardh**

Fucus selago Turner, 1808:122, pl. 55 [type locality: Red Sea].
Caulerpa selago (Turner) C. Agardh, 1817:xxiii.—Weber-van Bosse, 1913a:101.—Gilbert, 1946:78; 1961:440.—Velasquez, Trono, and Doty, 1975:132.—Taylor, 1977a:10.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I., Tumindao I.).

***Caulerpa serrulata* (Forsskål) J. Agardh**

Fucus serrulatus Forsskål, 1775:189 [type locality: Mokha, Yemen].
Caulerpa serrulata (Forsskål) J. Agardh, 1837:174.—Gilbert, 1942:14 [incl. var. *typica* f. *serrulata*]; 1946:78.—Zaneveld, 1950:111.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:7; 1959:94.—Gilbert, 1961:440.—Meñez, 1961:53.—Domantay, 1962:278.—Taylor, 1966b:351.—Aguilar-Santos and Doty, 1968:174.—Velasquez, 1971:435, fig. 15.—Reyes, 1972:142.—Trono, 1972a:96.—Cordero,

1973b:19.—Bersamin et al., 1973:185.—Trono, 1973b:218; 1973c:11, figs. 2, 23; 1973d:7, pl. 5: fig. 19.—Velasquez et al., 1973:15, pl. 5: fig. 21.—Ortega, Alcala, and Reyes, 1974:186.—Trono, 1975:33.—Velasquez, Trono, and Doty, 1975:132.—Taylor, 1977a:10 [var. *serrulata*].—Reyes, 1978:155, pl. 8: fig. 4.—Trono, 1978:5.—Trono and Tuason, 1978:3.—Cordero, 1979b:276.—Fortes, 1979:112.—Garcia, 1979:44 (table 1).—Puig and Cordero, 1979:24.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:18.—Trono and Ganzon-Fortes, 1980:21, fig. [s.n].—Meñez and Calumpung, 1981:383.—Trono and De Lara, 1981:4, pl. III: fig. 1.—Cordero, 1982a:60.—Meñez and Calumpung, 1982:9, pl. 2:E.—Hurtado-Ponce, 1983:116.—Hurtado-Ponce and Modelo, 1983:148 [var. *serrulata*].—Marcos-Agngarayngay, 1983:84, fig. 18.—Cordero, 1984a:77; 1984b:58; 1984c:51.—Hurtado-Ponce, 1984:179.—Marcos-Agngarayngay, 1984b:122.

Caulerpa freycinetii C. Agardh, 1822a:446 [type locality: Mariana Is.].—Collado, 1926:129.—G. Blanco, 1938:512.—Quisumbing, 1951:1007 [var. *typica*].—Montilla and Blanco, 1953:166.—de los Reyes, 1967:231.—Cordero, 1982a:60.

Caulerpa hummii Díaz-Piferrer, 1969b:13, fig. 1 [type locality: Orquilla I. (cited Orchilla I. in error), Archipiélago Los Hermanos, Venezuela].—Trono, 1973c:9, fig. 19.—Taylor, 1977a:11–12.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Ilocos Sur, Pangasinan, Bataan, Batangas, Quezon, Albay, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. MASBATE. SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental (incl. Apo I.). CEBU (incl. Mactan I., Sumilon I.). SQUIJOR. MINDANAO: Zamboanga, Davao. BASILAN. PALAWAN (incl. Balabac I., Culion I.). SULU: Sulu (incl. Siasi I.), Tawitawi (incl. Tumindao I.).

NOTE.—The conspecificity of *Caulerpa freycinetii* and *C. serrulata* was proposed by Børgesen (1932:5). *Caulerpa hummii* is included as a synonym on the authority of Taylor (1977a:11–12).

***Caulerpa serrulata* (Forsskål) J. Agardh
var. *boryana* (J. Agardh) Gilbert**

Caulerpa boryana J. Agardh, 1873:20 [type locality: “ad insulas Oceani pacifici calidioris”].

Caulerpa serrulata (Forsskål) J. Agardh var. *boryana* (J. Agardh) Gilbert, 1942:15.—Taylor, 1977a:11.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MINDANAO: Davao.

****Caulerpa serrulata* (Forsskål) J. Agardh var. *boryana*
(J. Agardh) Gilbert f. *longifolia* Gilbert**

Caulerpa serrulata (Forsskål) J. Agardh var. *boryana* (J. Agardh) Gilbert f. *longifolia* Gilbert, 1942:16, figs. 4, 5 [type locality: Siasi I., Sulu Prov., Sulu Archipelago].—Gilbert, 1961:441.—Hurtado-Ponce and Modelo, 1983:149.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. SULU: Sulu (Siasi I.).

***Caulerpa serrulata* (Forsskål) J. Agardh var. *boryana*
(J. Agardh) Gilbert f. *occidentalis* (Weber-van Bosse)
Yamada and Tanaka**

Caulerpa freycinetii C. Agardh var. *boryana* f. *occidentalis* Weber-van Bosse, 1898:315, pl. XXV: fig. 11 [type locality: Guadeloupe].—Gilbert, 1942:15; 1961:440.

Caulerpa serrulata (Forsskål) J. Agardh var. *boryana* (J. Agardh) Gilbert f. *occidentalis* (Weber-van Bosse) Yamada and Tanaka, 1938:62.—Gilbert, 1942:15; 1961:441.—Meñez and Calumpung, 1981:383; 1982:9, pl. 2:F.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental. PALAWAN (Culion I.). SULU: Sulu (Siasi I.).

***Caulerpa serrulata* (Forsskål) J. Agardh f. *lata*
(Weber-van Bosse) Tseng**

Caulerpa freycinetii C. Agardh var. *typica* f. *lata* Weber-van Bosse, 1898:313, pl. XXV: fig. 5 [syntype localities: Red Sea; Mariana Is.; Tonga; Sumbawa I., Indonesia; Guadeloupe].—Gilbert, 1942:15; 1961:440.

Caulerpa serrulata (Forsskål) J. Agardh f. *lata* (Weber-van Bosse) Tseng, 1936:178.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Batangas. MINDORO: Oriental Mindoro. LEYTE (Biliran I.). CEBU (Mactan I.). MINDANAO: Zamboanga. BASILAN. PALAWAN (incl. Culion I.).

***Caulerpa serrulata* (Forsskål) J. Agardh
var. *pectinata* (Weber-van Bosse) W.R. Taylor**

Caulerpa freycinetii C. Agardh var. *pectinata* Weber-van Bosse, 1898:316 [type locality: Guadeloupe].—Weber-van Bosse, 1913a:102.—Velasquez, Trono, and Doty, 1975:131 [without designation of variety].

Caulerpa serrulata (Forsskål) J. Agardh var. *pectinata* (Weber-van Bosse) W.R. Taylor, 1960:146.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

***Caulerpa serrulata* (Forsskål) J. Agardh
f. *spiralis* (Weber-van Bosse) Gilbert**

Caulerpa freycinetii C. Agardh var. *typica* f. *spiralis* Weber-van Bosse, 1898:314 [type locality: New Caledonia].

Caulerpa serrulata (Forsskål) J. Agardh f. *spiralis* (Weber-van Bosse) Gilbert, 1942:15 [var. *typica* f. *spiralis*].—Trono, 1973c:11, fig. 2.—Taylor, 1977a:11 [var. *spiralis*].

PHILIPPINE DISTRIBUTION.—LUZON: Batangas, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. SULU: Sulu.

***Caulerpa sertularioides* (S.G. Gmelin) Howe**

Fucus sertularioides S.G. Gmelin, 1768:151, pl. XV: fig. 4 [type locality: “in coralliis americanis”].

Caulerpa sertularioides (S.G. Gmelin) Howe, 1905:576.—Weber-van Bosse, 1913a:100 [forma *typica*].—Collado, 1926:129.—G. Blanco,

1938:512.—Gilbert, 1946:78.—Zaneveld, 1950:111.—Quisumbing, 1951:1008.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:8; 1959:94.—Gilbert, 1961:441.—Meñez, 1961:52.—Domantay, 1962:278.—Galutira and Velasquez, 1964:496.—Taylor, 1966b:351.—Aguilar-Santos and Doty, 1968:174.—Velasquez, 1968a:119, fig. 2.—Villones and Magdamo, 1968:24, fig. 9 [figure cited but not published].—Velasquez, 1971:435, fig. 14.—Reyes, 1972:143.—Trono, 1972a:96.—Bersamin et al., 1973:186.—Trono, 1973b:219; 1973c:12, fig. 4; 1973d:7, pl. 3; fig. 11.—Velasquez et al., 1973:14, pl. 4; fig. 19.—Westernhagen, 1973a:64.—Ortega, Alcala, and Reyes, 1974:187.—Westernhagen, 1974:112 (table I).—Trono, 1975:34.—Velasquez, Trono, and Doty, 1975:132.—Taylor, 1977a:12.—Vannajan and Trono, 1977:44, fig. 8.—Reyes, 1978:154, 162, pl. 7; fig. 6.—Trono, 1978:5.—Trono and Tuason, 1978:5.—Cordero, 1979b:276, 280.—Fortes, 1979:112.—Garcia, 1979:44 (table 1).—Puig and Cordero, 1979:24.—Cordero, 1980b:28.—Saraya and Trono, 1980:17.—Trono and Fortes, 1980:64.—Trono and Ganzon-Fortes, 1980:23, fig. [s.n].—Trono, Velasquez, and Guevarra, 1980:77.—Ganzon-Fortes, 1981:21.—Meñez and Calumpong, 1981:383.—Trono and De Lara, 1981:5.—Calumpong, 1982:145.—Meñez and Calumpong, 1982:9, pl. 3; f.—Trono and Fortes, 1982:144.—Trono and Ang, 1982:5.—Hurtado-Ponce, 1983:116.—Hurtado-Ponce and Modelo, 1983:149.—Marcos-Anggarayngay, 1983:85, fig. 19.—Cordero, 1984a:78; 1984b:59; 1984c:51.—Hurtado-Ponce, 1984:179.—Marcos-Anggarayngay, 1984b:122.—Ang, 1985b:298.

Fucus plumaris Forsskål, 1775:190 [type locality: Mokha, Yemen].

Caulerpa plumaris (Forsskål) C. Agardh, 1822a:436.—Montagne, 1844a:659.—Martens, 1868:62–63.—Dickie, 1876a:245.—Velasquez, Trono, and Doty, 1975:131.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, Pangasinan, Bataan, Manila, Batangas, Quezon, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. MASBATE. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Occidental, Negros Oriental. CEBU (Mactan I.). SIKUIJOR. MINDANAO: Zamboanga. PALAWAN (incl. Bugsuk I., Cuyo I.). SULU: Sulu (North Ubian I., Siasi I.), Tawitawi.

NOTE.—The conspecificity of *Fucus sertularioides* and *F. plumaris* was proposed by C. Agardh (1822a:436), who erroneously adopted the later of the two names. The situation was corrected by Howe (1905:576).

***Caulerpa sertularioides* (S.G. Gmelin) Howe
f. *brevipes* (J. Agardh) Svedelius**

Caulerpa plumaris (Forsskål) C. Agardh var. *brevipes* J. Agardh, 1873:15 [type locality: uncertain; see Note].

Caulerpa sertularioides (S.G. Gmelin) Howe f. *brevipes* (J. Agardh) Svedelius, 1906:114.—Gilbert, 1942:13; 1961:441.—Taylor, 1966b:351 [var. *sertularioides* f. *brevipes*].—Cordero, 1976c:8 [var. *brevipes*]; 1977b:34.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Rizal, Manila Bay. MINDORO: Oriental Mindoro. PALAWAN (Cuyo I.). SULU: Tawitawi (Pearl Bank, Turtle Is.).

NOTE.—In the protologue of *C. plumaris* var. *brevipes*, J. Agardh cited as a synonym *Fucus sertularioides* S.G. Gmelin, a species with the West Indies as its type locality, but

indicated the provenance of the variety as "in pacifico calidiore." An examination of pertinent specimens in the Agardh Herbarium (in LD) would probably resolve the conflict.

***Caulerpa sertularioides* (S.G. Gmelin) Howe
f. *farlowii* (Weber-van Bosse) Børgesen**

Caulerpa plumaris (Forsskål) C. Agardh f. *farlowii* Weber-van Bosse, 1898:295, pl. XXIV: figs. 5, 6 ["*farlowii*"] [syntype localities: Ilhas do Cabo Verde; Florida, USA; Flores, Indonesia].

Caulerpa sertularioides (S.G. Gmelin) Howe f. *farlowii* (Weber-van Bosse) Børgesen, 1907:365.—Trono and Ang, 1982:6.

PHILIPPINE DISTRIBUTION.—PALAWAN (Bugsuk I.).

***Caulerpa sertularioides* (S.G. Gmelin) Howe
f. *flagellata* (Weber-van Bosse) Weber-van Bosse**

Caulerpa plumaris (Forsskål) C. Agardh f. *flagellata* Weber-van Bosse, 1898:295, pl. XXIV: fig. 10 [type locality: Tonga].

Caulerpa sertularioides (S.G. Gmelin) Howe f. *flagellata* (Weber-van Bosse) Weber-van Bosse, 1913a:101 [including Philippine record].

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Sangasiapu I.).

***Caulerpa sertularioides* (S.G. Gmelin) Howe
f. *longipes* (J. Agardh) Collins**

Caulerpa plumaris (Forsskål) C. Agardh var. *longipes* J. Agardh, 1873:15 [type locality: West Indies].

Caulerpa sertularioides (S.G. Gmelin) Howe f. *longipes* (J. Agardh) Collins, 1909:415.—Weber-van Bosse, 1913a:101.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

***Caulerpa sertularioides* (S.G. Gmelin) Howe
f. *longiseta* (Bory de Saint-Vincent) Svedelius**

Caulerpa plumaris (Forsskål) C. Agardh var. *longiseta* Bory de Saint-Vincent, 1828 [1826–1829]:194, pl. 22: fig. 4 [type locality: not specified].

Caulerpa sertularioides (S.G. Gmelin) Howe f. *longiseta* (Bory de Saint-Vincent) Svedelius, 1906:114, fig. 10.—Gilbert, 1942:13; 1961:441.—Domantay, 1962:278.—Taylor, 1966b:351.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Ilocos Sur, Pangasinan, Bataan, Rizal, Manila Bay. MINDORO: Oriental Mindoro. MINDANAO: Zamboanga. BASILAN. PALAWAN.

***Caulerpa subserrata* Okamura**

Caulerpa subserrata Okamura, 1897:3, pl. I: figs. 1, 2 [type locality: Ogasawara-gunto (Bonin Is.), Japan].—Cordero, 1980c:70, fig. 1.—Hurtado-Ponce, 1983:117.—Hurtado-Ponce and Modelo, 1983:149.—Marcos-Anggarayngay, 1983:86, fig. 20.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Caulerpa taxifolia* (Vahl) C. Agardh**

Fucus taxifolius Vahl, 1802:36 [type locality: St. Croix, Virgin Is.].

Caulerpa taxifolia (Vahl) C. Agardh, 1817:xxii.—Montagne, 1844a: 659.—Martens, 1868:62–63.—Gilbert, 1942:12; 1946:78; 1961: 441.—Meñez, 1961:53.—de los Reyes, 1967:231.—Trono, 1975: 34.—Velasquez, Trono, and Doty, 1975:133.—Cordero, 1976c: 10; 1977b:34.—Taylor, 1977a:13.—Reyes, 1978:155, pl. 8: fig. 5.—Liao and Sotto, 1980:96.—Saraya and Trono, 1980:16.—Trono and Fortes, 1980:64.—Ganzon-Fortes, 1981:21.—Meñez and Calumpong, 1981:383.—Cordero, 1984a:78; 1984b:59; 1984c:51.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Sorsogon. MABATE. LEYTE (Biliran I.). CEBU (Mactan I.). SIKUIJOR. BASILAN. PALAWAN. SULU: Sulu (North Ubian I.).

***Caulerpa urvilliana* Montagne**

Caulerpa urvilliana Montagne, 1845:21 [type locality: Toud I. (Warrior Islet), Torres Strait, Australia].—Taylor, 1966b:352.—Trono, 1972a:97; 1973b:219; 1973d:7, pl. 2: fig. 5; 1975:35.—Velasquez, Trono, and Doty, 1975:133.—Taylor, 1977a:14 [var. *urvilliana*].—Reyes, 1978:154, pl. 7: fig. 5.—Meñez and Calumpong, 1981:383; 1982:10, pl. 3:D,E.—Trono and Ang, 1982:6.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon. NEGROS: Negros Occidental, Negros Oriental. SIKUIJOR. PALAWAN (incl. Bugsuk I., Cuyo I.). SULU: Sulu (incl. Siasi I.), Tawitawi (incl. Pearl Bank, Sibutu I.).

***Caulerpa urvilliana* Montagne
var. *vitiensis* Weber-van Bosse**

Caulerpa urvilliana Montagne var. *vitiensis* Weber-van Bosse, 1898:319, pl. XXVI: fig. 12 [syntype localities: Fiji; New Hebrides].—Taylor, 1977a:14.

PHILIPPINE DISTRIBUTION.—SULU: Sulu.

***Caulerpa verticillata* J. Agardh**

Caulerpa verticillata J. Agardh, 1847:6 [type locality: not specified].—Gilbert, 1961:442.—Trono, 1973b:219; 1973d:8, pl. 3: fig. 10.—Velasquez, Trono, and Doty, 1975:133.—Taylor, 1977a:14.—Reyes, 1978:154, pl. 8: fig. 3 [forma *typica*].—Saraya and Trono, 1980:18.—Meñez and Calumpong, 1981:383; 1982:10, pl. 3:A–C.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. NEGROS: Negros Oriental (Apo I.). CEBU (Mactan I.). SIKUIJOR. BASILAN. PALAWAN. SULU: Sulu (Siasi I.).

***Caulerpa vesiculifera* (Harvey) Harvey**

Caulerpa simpliciuscula (Turner) C. Agardh var. *vesiculifera* Harvey, 1859: pl. LXV: figs. 3, 4 [lectotype locality: Western Port, Victoria, Australia fide Womersley, 1984:272].

Caulerpa vesiculifera (Harvey) Harvey, 1863:1vi.—Taylor, 1966b:352.—Velasquez, Trono, and Doty, 1975:133.

PHILIPPINE DISTRIBUTION.—PALAWAN.

***Caulerpa webbiana* Montagne**

Caulerpa webbiana Montagne, 1837:354 [type locality: Arrecife, Isla Lanzarote, Islas Canarias].—Meñez and Calumpong, 1981:383; 1982:10, pl. 2:G–J.—Cordero, 1984a:78.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. NEGROS: Negros Oriental (Apo I.).

***Caulerpa webbiana* Montagne var. *pickeringii*
(Harvey and Bailey) Eubank**

Caulerpa pickeringii Harvey and Bailey, 1851:373 [type locality: Wilson's I. (Manihi I.), Tuamotu Archipelago].—Trono, 1973a:128.

Caulerpa webbiana Montagne var. *pickeringii* (Harvey and Bailey) Eubank, 1946:416.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon.

Family CODIACEAE***Codium* Stackhouse**

A preliminary study (unpublished) of Philippine *Codium* was made by P.C. Silva in 1950–1951 as part of a worldwide survey of the genus, but with special reference to Hawaii (Silva, 1952b). It was concluded that the representation in the Indonesian-Philippine region posed many problems that could not be solved until the genus as a whole was better understood. Subsequently, the *Codium* flora has been worked out for five temperate regions—southern Australia (Silva and Womersley, 1956), South Africa (Silva, 1959), New Zealand, Japan, and Pacific Mexico (the last three unpublished)—each showing a high degree of endemism. In addition, the *Codium* flora of the tropical Atlantic has been worked out (Silva, 1960), but Indonesian-Philippine collections that have become available since 1951 have been examined only superficially. At present, it is easier to say which species do not occur in the Philippines than it is to say which ones are there.

***Codium arabicum* Kützinger**

Codium arabicum Kützinger, 1856:35, pl. 100: fig. II [type locality: Tor, Sinai Peninsula, Egypt].—Silva, 1952b:382, figs. 11–13, pl. 34b.—Meñez, 1961:54, pl. 6: figs. 58, 59.—Reyes, 1972:143.—Trono, 1973b:221; 1973c:13, fig. 5.—Ortega, Alcá, and Reyes, 1974:185, 186.—Velasquez, Trono, and Doty, 1975:137.—Reyes, 1978:157, pl. 9: fig. 8.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:20, pl. IV: fig. 2.—Meñez and Calumpong, 1981:383.—Trono and De Lara, 1981:5, pl. III: fig. 2.—Hurtado-Ponce and Modelo, 1983:149.—Meñez, Phillips, and Calumpong, 1983:23.—Meñez and Calumpong, 1984:105.—Ang, 1985b:298.

Codium coronatum Setchell, 1926:82, pl. 10: figs. 2–5; pl. 11: figs. 2, 3; pl. 12: figs. 1, 5 [type locality: Arue Reef, Tahiti].—Gilbert, 1947:123; 1961:442.—Velasquez, Trono, and Doty, 1975:137.

Codium adhaerens [misapplied name].—Dickie, 1876a:243.—Gilbert, 1946:78; 1947:123; 1961:442.—Villones and Magdamo, 1968:25, fig. 11.—Velasquez, Trono, and Doty, 1975:136.—Cordero, 1979b:276,

281.—Puig and Cordero, 1979:26.—Cordero, 1984b:59; 1984c:52.
Codium setchellii [misapplied name].—Cordero, 1973b:20.—Westernhagen, 1973a:64; 1974:112 (table I).—Cordero, 1976c:8; 1977b:42, pl. VII: figs. 39–42; 1980b:30, fig. 3A.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Batangas, Quezon. MASBATE. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SQUIJOR. MINDANAO: Zamboanga. BASILAN. PALAWAN. SULU: Sulu (Siasi I.).

NOTE.—The synonymy was proposed by Silva (1952b:382). *Codium adhaerens* C. Agardh (1822a:457) is restricted to the Atlantic coast of southern Europe and adjacent North Africa, while *C. setchellii* Gardner (1919:489, pl. 42: figs. 10, 11) is restricted to the cool-temperate portion of the Pacific coast of North America.

****Codium bartlettii* Tseng and Gilbert**

Codium bartlettii Tseng and Gilbert, 1942:291, figs. 1, 2a [type locality: Puerto Galera, Oriental Mindoro Prov., Mindoro].—Gilbert, 1947:124; 1961:442.—Trono, 1973c:13, fig. 8.—Velasquez, Trono, and Doty, 1975:137.—Meñez and Calumpo, 1981:383.—Calumpo, 1982:145.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro. NEGROS: Negros Oriental.

***Codium contractum* Kjellman**

Codium contractum Kjellman, 1897b:35, pl. 2: fig. 12; pl. 7: figs. 1–3 [type locality: Amakusa Is., Kumamoto Prefecture, Japan].—Gilbert, 1947:124; 1961:442.—Velasquez, Trono, and Doty, 1975:137.

PHILIPPINE DISTRIBUTION.—LUZON: Cavite.

***Codium cylindricum* Holmes**

Codium cylindricum Holmes, 1896:250, pl. 7: figs. 1a,b [type locality: Misaki, Kanagawa Prefecture, Japan].—Cordero, 1980b:28; 1984a:79.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. SAMAR: Eastern Samar.

***Codium difforme* auctorum**

Codium difforme [misapplied name].—Gepp and Gepp, 1911:134.—Weber-van Bosse, 1913a:118.—Gilbert, 1946:78; 1961:443.—Velasquez, Trono, and Doty, 1975:137.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I.).

NOTE.—*Codium difforme* Kützinger (1843b:309) is a taxonomic synonym of *C. effusum* (Rafinesque) Delle Chiaje (1829:14, pl. 37), a name that applies to a species restricted to the Mediterranean Sea and adjacent Atlantic Ocean shores. The Siboga record (Gepp and Gepp, 1911:134) probably is referable to *C. spongiosum* Harvey (1855:565), a widespread Indo-Pacific species. The specimen, which

would permit confirmation, is not among other Siboga collections at Leiden (L).

***Codium edule* P.C. Silva**

Codium edule P.C. Silva, 1952b:392, fig. 18, pl. 35b [type locality: Waikiki, Oahu, Hawaiian Is.].—Trono and Fortes, 1980:64.—Ganzon-Fortes, 1981:21.—Trono and Fortes, 1982:145.—Hurtado-Ponce, 1983:119.—Hurtado-Ponce and Modelo, 1983:149.—Marcos-Angarayngay, 1983:94, fig. 27.—Hurtado-Ponce, 1984:179.—Marcos-Angarayngay, 1984b:122.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte.

***Codium elongatum* auctorum**

Codium elongatum [misapplied name].—Gepp and Gepp, 1911:136.—Weber-van Bosse, 1913a:120.—Gilbert, 1946:78; 1961:443.—Velasquez, Trono, and Doty, 1975:137.

PHILIPPINE DISTRIBUTION.—SULU: Tawitawi (Pearl Bank).

NOTE.—*Codium elongatum* (Turner) C. Agardh (1822a:454) is a nomenclatural synonym of *C. decorticans* (Woodward) Howe (1911:494), a name that applies to a species restricted to warm waters of the Mediterranean Sea and Atlantic Ocean (cf. Silva, 1960:516–521). The Siboga record (Gepp and Gepp, 1911:136) may be referable to *C. papillatum*, but the voucher specimen is not among other Siboga collections at Leiden (L).

***Codium fragile* (Suringar) Hariot**

Acanthocodium fragile Suringar, 1867:258 [type locality: Japan].
Codium fragile (Suringar) Hariot, 1889:32.—Westernhagen, 1973a:64.—Cordero, 1980b:29, pl. 17.—Tungpalan, 1984:139.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. PANAY: Aklan. CEBU (Mactan I.). SQUIJOR.

***Codium geppii* O.C. Schmidt**

Codium divaricatum A. Gepp and E.S. Gepp, 1911:136, 145, pl. 22: figs. 195–199 [syntype localities: Great Kai I., Moluccas and Kwandang Bay, Celebes, Indonesia] [replaced name].

Codium geppii O.C. Schmidt, 1923:50, fig. 33.—Gilbert, 1947:123.—Quisumbing, 1951:1009.—Gilbert, 1961:443.—Domantay, 1962:280.—Velasquez, Trono, and Doty, 1975:137.—Meñez and Calumpo, 1981:383.—Calumpo, 1982:145.

Codium repens [misapplied name].—Cordero, 1977b:42, pl. VII: figs. 43–45; 1979b:276; 1980b:30, fig. 3b, pl. 18.—Marcos-Angarayngay, 1983:97, fig. 28; 1984b:122.—Tungpalan, 1984:139.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, La Union, Pangasinan, Albay. CATANDUANES. MINDORO: Oriental Mindoro. PANAY: Aklan. NEGROS: Negros Oriental.

NOTE.—*Codium repens* P. Crouan and H. Crouan (in

Vickers, 1905:56) in the Atlantic is the ecological and taxonomic counterpart of *C. geppii* in the Indo-Pacific. Each species encompasses a wide range of morphological variation. *Codium geppii* is a substitute name for *C. divaricatum* A. Gepp and E.S. Gepp, a later homonym of *C. divaricatum* (C. Agardh) Biasoletto (1841:237).

Codium intricatum Okamura

Codium intricatum Okamura, 1913:74, pl. CXX: figs. 9–13 [syntype localities: various, all in Japan].—Gilbert, 1947:123; 1961:443.—Meñez, 1961:54, pl. 6: figs. 63, 64.—Galutira and Velasquez, 1964:499, pl. 2: fig. 5; pl. 7: fig. 25.—Velasquez, 1968a:120, fig. 4; 1971:437, fig. 18; 1972:63.—Velasquez, Trono, and Doty, 1975:137.—Reyes, 1978:157, 162, pl. 9: figs. 9, 10.—Puig and Cordero, 1979:26.—Velasquez, 1979b:230.—Cordero, 1980b:29, pl. 16.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:20.—Trono and Fortes, 1980:64.—Trono, Velasquez, and Guevarra, 1980:77.—Ganzon-Fortes, 1981:21.—Guzman, 1981:43.—Cordero, 1982a:60.—Trono and Fortes, 1982:145.—Cordero, 1984a:79.—Tungpalan, 1984:139.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Quezon. LEYTE (Biliran I.). CEBU (Mactan I.). SIKUJOR. BASILAN.

Codium muelleri auctorum

Codium muelleri [misapplied name].—Zaneveld, 1950:112; 1956:9; 1959:95.—Bersamin et al., 1973:186.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan, Ilocos, La Union, Pangasinan. LEYTE. CEBU. BOHOL.

NOTE.—*Codium muelleri* Kützing (1856:34, pl. 95: fig. II) is a distinctive species apparently restricted to southwestern and southern Australia. It seems likely that these records of *C. muelleri* and most (if not all) Philippine records of *C. tenue* apply to the same undescribed species.

Codium ovale Zanardini

Codium ovale Zanardini, 1878:37 [type locality: Sorong, Irian Barat, Indonesia].—Gepp and Gepp, 1911:134.—Weber-van Bosse, 1913a:118.—Gilbert, 1946:78; 1961:443.—Trono, 1973b:221.—Velasquez, Trono, and Doty, 1975:137.

PHILIPPINE DISTRIBUTION.—SULU: Sulu (North Ubian I., Siasi I.), Tawitawi (Pearl Bank, Sangasiapu I.).

**Codium papillatum* Tseng and Gilbert

Codium papillatum Tseng and Gilbert, 1942:293, figs. 2b–d, 3 [type locality: Puerto Galera, Oriental Mindoro Prov.].—Gilbert, 1947:124; 1961:443.—Galutira and Velasquez, 1964:497, pl. 2: fig. 4; pl. 6: figs. 23a,b.—Velasquez, 1972:63.—Velasquez, Trono, and Doty, 1975:137.—Velasquez, 1979b:230.—Trono and Fortes, 1980:64.—Ganzon-Fortes, 1981:21.—Cordero, 1982a:60, fig. 4.—Trono and Fortes, 1982:145.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Bataan, Cavite. MINDORO: Oriental Mindoro.

Codium platyclados Jones and Kraft

Codium platyclados Jones and Kraft, 1984:266, figs. 8–13 [including Philippine record, page 273, figs. 10b, 12c] [type locality: Lord Howe I.].

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon (San Bernardino I.).

Codium pugniforme Okamura

Codium pugniforme Okamura, 1915:147, pl. CXXXV: figs. 6–9 ["pugniformis"] [syntype localities: various, all in Japan].—Cordero, 1973b:20 [C. pugniforme prox.].—Puig and Cordero, 1979:26.

PHILIPPINE DISTRIBUTION.—LEYTE (Biliran I.).

Codium tenue auctorum

Codium tenue [misapplied name].—Gepp and Gepp, 1911:136.—Seale, 1911:309.—Wester, 1916:158.—Weber-van Bosse, 1913a:120.—Wester, 1921:224; 1924:21.—G. Blanco, 1938:512.—Gilbert, 1946:78.—Zaneveld, 1950:112.—Quisumbing, 1951:1009.—Montilla and Blanco, 1953:166, fig. 5.—Zaneveld, 1956:10; 1959:96.—Gilbert, 1961:443.—Domantay, 1962:279.—Cordero, 1973b:20.—Velasquez et al., 1973:17, pl. 6: fig. 28.—Velasquez, Trono, and Doty, 1975:137.—Puig and Cordero, 1979:27.—Trono and Fortes, 1980:64.—Ganzon-Fortes, 1981:21.—Guzman, 1981:43.—Cordero, 1982a:60, fig. 3.—Trono and Fortes, 1982:145.—Cordero, 1984a:79.—Tungpalan, 1984:139.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, La Union, Pangasinan, Bataan. LEYTE (Biliran I.). SULU: Sulu (North Ubian I.).

NOTE.—*Codium tenue* (Kützing) Kützing (1856:33, pl. 95: fig. I) appears to be restricted to estuaries of South Africa (cf. Silva, 1959:140–143). Placement of Philippine records awaits completion of a monographic study.

Codium tomentosum auctorum

Codium tomentosum [misapplied name].—Montagne, 1844a:659.—Martens, 1868:47, 64–65.—Dickie, 1876a:243.—Piccone, 1886:29, 89.—Schmidt, 1923:39.—Zaneveld, 1950:112; 1956:10; 1959:96.—Meñez, 1961:54, pl. 6: figs. 60–62.—Reyes, 1972:143.—Cordero, 1973b:20.—Velasquez, Trono, and Doty, 1975:137.—Reyes, 1978:157, 162, pl. 9: figs. 11, 12.—Liao and Sotto, 1980:97.—Trono and Fortes, 1980:64.—*Codium dichotomum* [misapplied name].—Gilbert, 1946:78; 1961:442.—Velasquez, Trono, and Doty, 1975:137.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MASBATE (Ticao I.). LEYTE (Biliran I.). NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUJOR.

NOTE.—*Codium dichotomum* S.F. Gray (1821:293) is a nomenclatural synonym of *Codium tomentosum* Stackhouse (1797 [1795–1801]:xxiv), a name that applies to a species restricted to the eastern North Atlantic (cf. Silva, 1955:569–571). Placement of the Philippine records awaits completion of a monographic study.

Family HALIMEDACEAE

Halimeda Lamouroux*Halimeda bikinensis* W.R. Taylor

Halimeda bikinensis W.R. Taylor, 1950:87, 207, pl. 48: fig. 1 [type locality: Bikini Atoll, Marshall Is.].—Cordero and Tanaka, 1972:83, figs. 1A, 2E,F.—Saraya and Trono, 1980:22, pl. V: fig. 2.—Marcos-Agngarayngay, 1983:89, fig. 22.—Cordero, 1984a:80.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan.

Halimeda copiosa Goreau and Graham

Halimeda copiosa Goreau and Graham, 1967:433, figs. 1–10 [type locality: Jamaica].

Halimeda opuntia (Linnaeus) Lamouroux f. *hederacea* Barton, 1901:21, pl. III: fig. 23 [lectotype locality: Tanah-Djampeah, Flores Sea, Indonesia fide Colinvaux, 1968:32].—Gilbert, 1947:130; 1961:444.

Halimeda opuntia (Linnaeus) Lamouroux var. *hederacea* (Barton) Hillis, 1959:360, pl. 5: fig. 4 [including Philippine records].—Cordero, 1977b:40.

Halimeda hederacea (Barton) Colinvaux, 1968:30, figs. 1, 2(1,4,5,6,8) [including Philippine record].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Quezon. MINDANAO: Zamboanga. BASILAN. SULU: Sulu (near Lapac I.).

NOTE.—The synonymy was proposed by Hillis-Colinvaux (1980:118).

Halimeda cuneata Hering

Halimeda cuneata Hering in Krauss, 1846:214 [type locality: "Natalbai" (Durban), South Africa].—Martens, 1868:25, 66–67.—Meñez, 1961:58, pl. 4: figs. 43–46; pl. 5: figs. 54, 55.—Cordero, 1973b:21.—Velasquez, Trono, and Doty, 1975:147.—Cordero, 1977b:39, pl. VI: fig. 30; 1979b:281.—Puig and Cordero, 1979:27.—Cordero, 1980b:31, fig. 1B, pl. 19.—Marcos-Agngarayngay, 1983:90, fig. 23.—Cordero, 1984a:80 [with query].—Tungpalan, 1984:138.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan. SAMAR: Western Samar, Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. SIKUIJOR. MINDANAO: Zamboanga, Surigao del Sur.

Halimeda cylindracea Decaisne

Halimeda cylindracea Decaisne, 1842b:103 [type locality: Nosy-bé, Madagascar Republic].—Hillis, 1959:373, pl. 4: fig. 3; pl. 5: figs. 22, 23; pl. 6: fig. 19; pl. 7: fig. 13.—Taylor, 1966b:353 ["*cylindrica*"].—Trono, 1972a:97.—Cordero, 1973a:167, figs. 1–4.—Trono, 1973b:225; 1975:36.—Velasquez, Trono, and Doty, 1975:147 ["*cylindracea*" and "*cylindrica*"].—Trono and Ganzon-Fortes, 1980:25, fig. [s.n.].—Trono and Ang, 1982:11.

Halimeda monile [misapplied name fide Hillis, 1959:374].—Gilbert, 1947:130; 1961:443.—Velasquez, Trono, and Doty, 1975:148.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas, Quezon,

Sorsogon. SAMAR: Eastern Samar. PALAWAN (Bugsuk I., Culion I.). SULU: Sulu (Siasi I.), Tawitawi.

Halimeda discoidea Decaisne

Halimeda discoidea Decaisne, 1842b:102 [type locality: said to be "Kamtschatka" but true provenance unknown].—Martens, 1868:25, 66–67.—Gilbert, 1946:78; 1947:125 [f. *typica*].—Hillis, 1959:352, pl. 2: fig. 5; pl. 5: fig. 11; pl. 6: fig. 11; pl. 7: figs. 9, 10; pl. 8: figs. 5–8.—Gilbert, 1961:443 [incl. f. *discoidea*].—Meñez, 1961:57, pl. 4: figs. 47–50.—Taylor, 1966b:353 [var. *discoidea*].—Reyes, 1972:143.—Trono, 1972a:97.—Cordero, 1973b:21.—Trono, 1973b:225; 1973c:15, figs. 7, 11; 1973d:8, pl. 6: figs. 23, 24.—Ortega, Alcalá, and Reyes, 1974:186, 187, 188.—Velasquez, Trono, and Doty, 1975:147.—Trono and Young, 1977:55.—Reyes, 1978:159, pl. 11: figs. 5, 6.—Trono, 1978:6.—Trono and Tuason, 1978:4.—Garcia, 1979:44 (table 1).—Puig and Cordero, 1979:27.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:22, pl. IV: figs. 3, 4.—Hurtado-Ponce, 1983:117.—Hurtado-Ponce and Modelo, 1983:149.—Cordero, 1984c:52.—Tungpalan, 1984:138.

**Halimeda discoidea* Decaisne f. *intermedia* Gilbert, 1947: 126 [type locality: Dalupiri I., Babuyan Is., Cagayan Prov., Luzon].—Gilbert, 1961:443.

**Halimeda discoidea* Decaisne f. *subdigitata* Gilbert, 1947:125 [type locality: Siasi Island, Sulu Prov., Sulu Archipelago].—Gilbert, 1961:443.—Taylor, 1966b:353 [var. *discoidea* f. *subdigitata*].

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan. CATANDUANES. MINDORO: Oriental Mindoro. MARINDUQUE. MASBATE. SAMAR: Eastern Samar. LEYTE (Biliran I.). NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR. MINDANAO: Zamboanga. BASILAN. PALAWAN (incl. Balabac I.). SULU: Sulu (incl. Cagayan Sulu I., Siasi I.), Tawitawi (incl. Pearl Bank, Sibutu I.).

NOTE.—Hillis (1959:354) does not give taxonomic recognition to the formae of this species.

Halimeda fragilis W.R. Taylor

Halimeda fragilis W.R. Taylor, 1950:88, 207, pl. 48: fig. 2 [type locality: Eniwetok Atoll, Marshall Is.].—Cordero, 1976c:6; 1977b:39, pl. VI: fig. 34.—Trono and Young, 1977:56.—Trono and Tuason, 1978:5.—Saraya and Trono, 1980:23.—Meñez and Calumpang, 1981:383.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. CATANDUANES. CENTRAL VISAYAS.

Halimeda gigas W.R. Taylor

Halimeda gigas W.R. Taylor, 1950:84, 206, pl. 44: fig. 2 [type locality: Eniwetok Atoll, Marshall Is.].—Domantay, 1962:280.—Velasquez, Trono, and Doty, 1975:147.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Halimeda gracilis Harvey ex J. Agardh

Halimeda gracilis Harvey ex J. Agardh, 1887:82 [type locality: Sri Lanka].—Gilbert, 1946:78; 1961:443.—Velasquez, Trono, and Doty, 1975:147.—Hurtado-Ponce, 1983:117.—Hurtado-Ponce and Modelo, 1983:149.—Cordero, 1984a:80; 1984b:60.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte. PALAWAN.

Halimeda incrassata (Ellis) Lamouroux

Corallina incrassata Ellis, 1768:408, pl. XVII: figs. 20–27 [type locality: West Indies].
Halimeda incrassata (Ellis) Lamouroux, 1816:307.—Hillis, 1959:365, pl. 4: figs. 1, 2; pl. 5: fig. 21; pl. 6: figs. 21–24.—Gilbert, 1961:444.—Velasquez, 1971:437, fig. 17.—Trono, 1972a:98.—Velasquez, Trono, and Doty, 1975:148.—Saraya and Trono, 1980:23, pl. V: fig. 3.
Corallina tridens Ellis and Solander, 1786:109, pl. 20: fig. a [type locality: “coast of the new ceded Islands” (probably Dominica)].
Halimeda tridens (Ellis and Solander) Lamouroux, 1816:308.—Gilbert, 1947:130 [forma *typica*].—Velasquez, Trono, and Doty, 1975:148.
Halimeda incrassata (Ellis and Solander) Lamouroux f. *lamourouxii* J. Agardh, 1887:86 [syntype localities: West Indies; Australia].—Gilbert, 1961:444.
Halimeda tridens (Ellis and Solander) Lamouroux f. *lamourouxii* (J. Agardh) Gilbert, 1947:131.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Quezon. MINDANAO: Zamboanga. BASILAN. PALAWAN (incl. Culion I., Cuyo I.). SULU: Sulu (North Ubian I., Siasi I.), Tawitawi.

NOTE.—The synonymy was proposed by Hillis (1959:365).

Halimeda lacunalis W.R. Taylor

Halimeda lacunalis W.R. Taylor, 1950:91, 208, pl. 51 [type locality: Eniwetok Atoll, Marshall Is.].—Meñez and Calumpong, 1981:382.

PHILIPPINE DISTRIBUTION.—CENTRAL VISAYAS.

Halimeda macroloba Decaisne

Halimeda macroloba Decaisne, 1841:118 [type locality: Red Sea].—Montagne, 1844a:659.—Dickie, 1876a:243.—Barton, 1901:24, pl. III: figs. 33–38.—Weber-van Bosse, 1913a:122.—Gilbert, 1946:78; 1947:126.—Hillis, 1959:375, pl. 3: fig. 3; pl. 5: figs. 19, 20; pl. 6: fig. 17.—Gilbert, 1961:443.—Domantay, 1962:280.—Moul, 1964:6.—Taylor, 1966b:353.—Cordero and Tanaka, 1972:85, figs. 1b, 2c,d.—Cornejo and Velasquez, 1972:172, 179, 183.—Reyes, 1972:144.—Trono, 1972a:98; 1973b:226; 1973c:15, figs. 10, 12; 1973d:9.—Velasquez et al., 1973:17, pl. 6: fig. 27.—Ortega, Alcalá, and Reyes, 1974:186.—Trono, 1975:37.—Velasquez, Trono, and Doty, 1975:148.—Trono and Young, 1977:56.—Reyes, 1978:159, pl. 11: figs. 1, 2.—Trono, 1978:7.—Trono and Tuason, 1978:5.—Cordero, 1979b:281.—Puig and Cordero, 1979:28.—Cordero, 1980b:32, fig. 2b, pl. 20.—Fortes and Trono, 1980:68.—Saraya and Trono, 1980:20, pl. V: fig. 1.—Trono and Ganzon-Fortes, 1980:27, fig. [s.n.].—Meñez and Calumpong, 1981:383.—Trono and De Lara, 1981:6, pl. IV: fig. 1.—Trono and Ang, 1982:11.—Hurtado-Ponce, 1983:118.—Hurtado-Ponce and Modelo, 1983:149.—Marcos-Aggarayngay, 1983:90, fig. 24.—Cordero, 1984a:81.—Cordero, 1984b:60.—Cordero, 1984c:52.—Tungpalan, 1984:138.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (incl. Babuyan Is.), Ilocos Norte, La Union, Pangasinan, Bataan, Batangas, Quezon, Camarines Norte, Sorsogon.

CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. MASBATE. SAMAR: Eastern Samar. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUJOR. BOHOL. MINDANAO: Zamboanga, Surigao del Sur. BASILAN. PALAWAN (incl. Balabac I., Bugsuk I., Culion I.). SULU: Sulu (Siasi I.), Tawitawi (incl. Pearl Bank, Sibutu I., Turtle Is.).

Halimeda macrophysa Askenasy

Halimeda macrophysa Askenasy, 1888:14, pl. IV: figs. 1–4 [type locality: Makutu I., Fiji].—Taylor, 1966b:353.—Trono, 1975:37.—Velasquez, Trono, and Doty, 1975:148.—Trono and Young, 1977:56.—Trono and Tuason, 1978:6.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon. CATANDUANES. SULU: Tawitawi (Turtle Is.).

Halimeda micronesica Yamada

Halimeda micronesica Yamada, 1941b:121, fig. 15 [type locality: Ant Atoll, near Ponape, Caroline Is.].—Hillis, 1959:364, pl. 3: fig. 1; pl. 5: fig. 13, 14; pl. 6: fig. 2.—Gilbert, 1961:444.—Taylor, 1966b:353.—Velasquez, Trono, and Doty, 1975:148.

**Halimeda orientalis* Gilbert, 1947:126, fig. 1 [type locality: Tumakid, Basilan I.].

PHILIPPINE DISTRIBUTION.—BASILAN. SULU: Tawitawi.
NOTE.—The synonymy was proposed by Hillis (1959:364).

Halimeda opuntia (Linnaeus) Lamouroux

Corallina opuntia Linnaeus, 1758:805 [lectotype locality: Jamaica fide Hillis, 1959:361].
Halimeda opuntia (Linnaeus) Lamouroux, 1816:308.—Martens, 1868:25, 64–65.—Dickie, 1876a:243, 245 [f. *typica*].—Barton, 1901:18, pl. II: figs. 19–21.—Weber-van Bosse, 1913a:121 [f. *typica*].—Merrill, 1918:39.—Gilbert, 1946:78.—Gilbert, 1947:129 [f. *typica*].—Hillis, 1959:359, pl. 2: figs. 7, 8; pl. 5: fig. 3; pl. 6: fig. 6; pl. 7: fig. 3 [var. *opuntia*].—Gilbert, 1961:443 [incl. f. *opuntia*].—Meñez, 1961:59, pl. 5: figs. 51–53, 56, 57.—Domantay, 1962:280.—Moul, 1964:6 [var. *opuntia*].—Taylor, 1966b:353.—Villones and Magdamo, 1968:25, fig. 13.—Velasquez, 1971:437, fig. 16.—Reyes, 1972:144.—Trono, 1972a:98.—Cordero, 1973b:21.—Trono, 1973b:226; 1973c:16, fig. 9; 1973d:9.—Velasquez et al., 1973:16, pl. 5: fig. 24.—Westernhagen, 1973a:65.—Ortega, Alcalá, and Reyes, 1974:185, 186, 187.—Trono, 1975:37.—Velasquez, Trono, and Doty, 1975:148.—Cordero, 1976c:8, 9, 10; 1977b:40, pl. VI: figs. 31–33 [var. *opuntia*].—Taylor, 1977b:10.—Trono and Young, 1977:55.—Reyes, 1978:158, pl. 10: figs. 5, 6.—Trono, 1978:7.—Trono and Tuason, 1978:6.—Puig and Cordero, 1979:28.—Calumpong, 1980:143 (table 3).—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:21, pl. VI: fig. 1.—Trono and Ganzon-Fortes, 1980:29, fig. [s.n.].—Chan, 1981:387.—Meñez and Calumpong, 1981:383.—Trono and De Lara, 1981:6, pl. III: fig. 3.—Trono and Ang, 1982:10.—Hurtado-Ponce, 1983:118.—Hurtado-Ponce and Modelo, 1983:149.—Cordero, 1984a:81; 1984b:60.

**Fucus prolifer* M. Blanco, 1837:838 [type locality: “Punta Santiago” (Batangas Prov. ?)].—M. Blanco, 1845:579; 1879:259.—Velasquez, Trono, and Doty, 1975:144.

Halimeda triloba Decaisne, 1842:102 [lectotype locality: China Sea fide

Barton, 1901: explanation of pl. II: fig. 20].—Bailey and Harvey, 1862:173.—Martens, 1868:64–65.—Velasquez, Trono, and Doty, 1975:149.

Halimeda opuntia (Linnaeus) Lamouroux f. *triloba* (Decaisne) J. Agardh, 1887:84.—Gilbert, 1947:129.

Halimeda cordata J. Agardh, 1887:83 [type locality: Red Sea].

Halimeda opuntia (Linnaeus) Lamouroux f. *cordata* (J. Agardh) Barton, 1901:20, pl. II: fig. 21.—Gilbert, 1947:129; 1961:444.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, La Union, Pangasinan, Batangas, Quezon, Camarines Norte, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SAMAR: Eastern Samar. LEYTE (Biliran I.). GUIMARAS. NEGROS: Negros Occidental, Negros Oriental. CEBU (incl. Mactan I.). SIKUIJOR. BOHOL. MINDANAO: Zamboanga (incl. Sacol I.), Misamis Occidental, Davao. BASILAN. PALAWAN (incl. Balabac I., Bugsuk I., Culion I., Cuyo I.). SULU: Sulu (North Ubian I., Siasi I.), Tawitawi.

NOTE.—Hillis-Colinvaux (1980:110) does not give taxonomic recognition to formae *cordata* and *triloba*. According to Merrill (1918:39), Blanco's description of *Fucus prolifer* is referable to *Halimeda opuntia*, but Martens (1868:45) thought that Blanco could have had other species in hand. In the absence of authentic specimens, a definitive placement is impossible. In any event, *Fucus prolifer* M. Blanco is a later homonym of *F. prolifer* Forsskal (1775:193) and *F. prolifer* Lightfoot (1777:949, pl. XXX).

Halimeda renschii Hauck

Halimeda renschii Hauck, 1886 [1886–1887]:167 [type locality: Johanna (Anjouan) I., Comoro Is.].—Hillis-Colinvaux, 1975:93.

Halimeda opuntia (Linnaeus) Lamouroux f. *renschii* (Hauck) Barton, 1901:21, pl. II: figs. 22, 22a.—Gilbert, 1947:130; 1961:444.

**Halimeda batanensis* W.R. Taylor, 1973:34, figs. 1, 2 [type locality: Batan I., Batanes Prov., Luzon].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.).

NOTE.—The synonymy was proposed by Hillis-Colinvaux (1975:93).

Halimeda simulans Howe

Halimeda simulans Howe, 1907:503, pl. 29 [type locality: Culebra I., Puerto Rico].—Trono, 1972a:94; 1975:38.—Trono and Ganzon-Fortes, 1980:31, fig. [s.n].—Trono and Ang, 1982:10.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas, Sorsogon. PALAWAN (Bugsuk I.). SULU: Tawitawi.

Halimeda stuposa W.R. Taylor

Halimeda stuposa W.R. Taylor, 1950:90, 207, pl. 43: fig. 1; pl. 49; pl. 50: fig. 2 [type locality: Rongelap Atoll, Marshall Is.].—Reyes, 1978:159, pl. 11: figs. 3, 4.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

Halimeda taenicola W.R. Taylor

Halimeda taenicola W.R. Taylor, 1950:86, 207, pl. 46: fig. 1 [type locality: Rongerik Atoll, Marshall Is.].—Trono and Young, 1977:56.—Trono and Tuason, 1978:7.

PHILIPPINE DISTRIBUTION.—CATANDUANES.

Halimeda tuna (Ellis and Solander) Lamouroux

Corallina tuna Ellis and Solander, 1786:111, pl. 20: fig. e [type locality: Mediterranean Sea].

Halimeda tuna (Ellis and Solander) Lamouroux, 1816:309, pl. XI: fig. 8.—Dickie, 1876a:244.—Gilbert, 1946:78; 1947:124 [f. *typica*].—Hillis, 1959:342, pl. 1: figs. 4, 5; pl. 5: fig. 9; pl. 6: fig. 7.—Gilbert, 1961:444.—Meñez, 1961:57.—Domantay, 1962:280 [f. *typica*].—Taylor, 1966b:354 [var. *tuna*].—Trono, 1972a:98; 1973b:226; 1973c:17, fig. 21.—Velasquez et al., 1973:16, pl. 6: fig. 26.—Westernhagen, 1973a:65.—Hamoy and Garciano, 1975:71.—Trono, 1975:38.—Velasquez, Trono, and Doty, 1975:149.—Cordero, 1976c:6; 1977b:41, pl. VI: fig. 37.—Trono and Young, 1977:55.—Reyes, 1978:160, pl. 11: fig. 7.—Trono, 1978:7.—Trono and Tuason, 1978:7.—Cordero, 1979b:276; 1980b:33, fig. 2b.—Saraya and Trono, 1980:21, pl. V: fig. 4.—Trono and Fortes, 1980:64.—Trono and Ganzon-Fortes, 1980:33, fig. [s.n].—Chan, 1981:387.—Ganzon-Fortes, 1981:21.—Meñez and Calumpang, 1981:383.—Trono and Fortes, 1982:145.—Cordero, 1984a:81.—Tungpalan, 1984:138.

Halimeda platydisca Decaisne, 1842:102 [type locality: Islas Canarias].

Halimeda tuna (Ellis and Solander) Lamouroux f. *platydisca* (Decaisne) Barton, 1901:14, pl. I: fig. 2.—Gilbert, 1947:124; 1961:444.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Bataan, Batangas, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. MARINDUQUE. PANAY: Aklan. CEBU (incl. Mactan I.). SIKUIJOR. MINDANAO: Zamboanga, Surigao del Sur. BASILAN. PALAWAN (Culion I.). SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—Hillis-Colinvaux (1980:122) does not give taxonomic recognition to f. *platydisca*.

**Halimeda velasquezii* W.R. Taylor

Halimeda velasquezii W.R. Taylor, 1962:177, figs. 8–14 [type locality: Santa Ana, Cagayan Prov., Luzon].—Taylor, 1966b:354.—Velasquez et al., 1973:16, pl. 5: fig. 25.—Trono, 1975:39.—Velasquez, Trono, and Doty, 1975:149.—Cordero, 1976c:6, 8; 1977b:41, pl. VI: figs. 35, 36; pl. VII: fig. 38.—Hillis-Colinvaux, 1980:117, fig. 32.

Halimeda opuntia (Linnaeus) Lamouroux f. *intermedia* Yamada, 1934:81 [syntype localities: Naha and Itoman, Ryukyu-retto, Japan].—Gilbert, 1947:130; 1961:444.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan, Bataan, Batangas, Sorsogon.

NOTE.—The synonymy was proposed by Hillis-Colinvaux (1980:117).

**Halimeda velasquezii* W.R. Taylor var. *robusta* Cordero

**Halimeda velasquezii* W.R. Taylor var. *robusta* Cordero, 1974a:115, fig. 1 [type locality: Camiguin I., Babuyan Is., Cagayan Prov., Luzon].—Cordero and Tanaka, 1972:86, figs. 1c, 2a,b [*H. velasquezii*].

PHILIPPINE DISTRIBUTION.—As above.

Family UDOTACEAE

Avrainvillea Decaisne**Avrainvillea erecta* (Berkeley) A. Gepp and E.S. Gepp

Dichonema erectum Berkeley, 1842:157, pl. VII: fig. 11 [type locality: "Philippine Islands"].

Avrainvillea erecta (Berkeley) A. Gepp and E.S. Gepp, 1911:29, pl. IX: figs. 84, 85; pl. X: figs. 86–89 [including Philippine records].—Gilbert, 1946:78; 1947:122; 1961:442.—Meñez, 1961:56, pl. 3: figs. 26–30.—Domantay, 1962:276.—Taylor, 1966b:352.—Gilbert and Doty, 1969:123, figs. 7, 8.—Reyes, 1972:143.—Trono, 1973b:220; 1973c:18.—Velasquez et al., 1973:15, pl. 5: fig. 22.—Velasquez, Trono, and Doty, 1975:128.—Reyes, 1978:160, pl. 11: fig. 8.—Puig and Cordero, 1979:25.—Saraya and Trono, 1980:19, pl. III: fig. 3.—Meñez and Calumpung, 1981:383.—Marcos-Agngarayngay, 1983:94, fig. 26.—Olsen-Stojkovich, 1985a:22.

**Udotea sordida* Montagne, 1844a:659 [type locality: "Philippines"].—Kützing, 1849:503.—Montagne, 1856:451.—Martens, 1868:64–65.—Dickie, 1874a:198.—Velasquez, Trono, and Doty, 1975:167.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Bataan. CATANDUANES. MINDORO: Oriental Mindoro. SAMAR: Eastern Samar. LEYTE (Biliran I.). NEGROS: Negros Oriental. SQUIJOR. BASILAN. PALAWAN (incl. Balabac I., Cuyo I.). SULU: Sulu (Siasi I.).

NOTE.—The synonymy was proposed by Gepp and Gepp (1911:29).

Avrainvillea lacerata Harvey ex J. Agardh

Avrainvillea lacerata Harvey ex J. Agardh, 1887:54 [type locality: Tonga].—Taylor, 1966b:352.—Trono, 1972a:97; 1973b:220; 1973d:10, pl. 5: fig. 17.—Velasquez, Trono, and Doty, 1975:129.—Reyes, 1978:160, pl. 11: fig. 9.—Trono, 1978:6.—Trono and Tuason, 1978:4.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:18, pl. III: fig. 2.—Trono and Ang, 1982:9.—Olsen-Stojkovich, 1985a:33.

Avrainvillea lacerata Harvey ex J. Agardh var. *robustior* A. Gepp and E.S. Gepp, 1911:139, pl. XIII: figs. 108, 109 [type locality: Singapore].—Domantay, 1962:276 [f. *robustior*].—Meñez and Calumpung, 1981:383.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CATANDUANES. MARINDUQUE. SAMAR: Eastern Samar. CEBU (Mactan I.). SQUIJOR. MINDANAO: Zamboanga (incl. Sacol I.). PALAWAN (incl. Bugsuk I.). SULU: Sulu (Siasi I.), Tawitawi.

NOTE.—Olsen-Stojkovich (1985a) does not give taxonomic recognition to var. *robustior*.

Avrainvillea longicaulis (Kützing) Murray and Boodle

Rhipilia longicaulis Kützing, 1858:13, pl. 28: fig. II [type locality: Antilles].

Avrainvillea longicaulis (Kützing) Murray and Boodle, 1889:70.—Olsen-Stojkovich, 1985a:29.

Avrainvillea levis Howe, 1905:565, pl. 23: fig. 1; pl. 26: figs. 8–10 [type locality: Cave Cays, Exuma Chain, Bahama Is.].

Avrainvillea sordida [misapplied name; see Note].—Meñez, 1961:56, pl. 3: figs. 35–39.—Gilbert and Doty, 1969:124, figs. 13, 14.—Trono, 1973b:221.—Velasquez, Trono, and Doty, 1975:129.—Cordero, 1976c:9; 1977b:36, pl. V: fig. 26.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan. CATANDUANES. SULU: Sulu (Siasi I.).

NOTE.—The taxonomic and nomenclatural complexities of this species are discussed by Olsen-Stojkovich (1985a:29). The conspecificity of *Rhipilia longicaulis* and *Avrainvillea levis* was suspected by Gepp and Gepp (1911:40), who, however, were reluctant to use the binomial *A. longicaulis* because Murray and Boodle, when making the combination, misapplied it to representatives of *A. nigricans*. Retention of *A. longicaulis* is required by Article 55.2 of the ICBN.

Avrainvillea nigricans Decaisne

Avrainvillea nigricans Decaisne, 1842:108 [type locality: West Indies near Guadeloupe].—Liao and Sotto, 1980:97.—Olsen-Stojkovich, 1985a:38.

PHILIPPINE DISTRIBUTION.—CEBU (Mactan I.).

Avrainvillea obscura (C. Agardh) J. Agardh

Anadyomene ? obscura C. Agardh, 1822a:401 [type locality: Guam, Mariana Is.].

Avrainvillea obscura (C. Agardh) J. Agardh, 1887:53.—Meñez, 1961:55, pl. 3: figs. 30–34.—Domantay, 1962:272, 273.—Gilbert and Doty, 1969:124.—Trono, 1972a:97.—Velasquez, Trono, and Doty, 1975:129.—Cordero, 1977b:36, pl. IV: figs. 21, 22.—Olsen-Stojkovich, 1985a:19.

**Avrainvillea capituliformis* Tanaka, 1967:14, figs. 2, 3, pl. I:B [type locality: San Pio Quinto, Camiguin I., Babuyan Is., Cagayan Prov., Luzon].—Trono, 1973c:18; 1975:35.—Velasquez, Trono, and Doty, 1975:128.—Puig and Cordero, 1979:25.—Saraya and Trono, 1980:19.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Pangasinan, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. LEYTE (Biliran I.). SULU: Tawitawi.

NOTE.—The synonymy was proposed by Olsen-Stojkovich (1985a).

Boodleopsis A. Gepp and E.S. Gepp*Boodleopsis pusilla* (Collins) W.R. Taylor, Joly, and Bernatowicz

Dichotomosiphon pusillus Collins, 1909:431 [type locality: West Indies].

Boodleopsis pusilla (Collins) W.R. Taylor, Joly, and Bernatowicz, 1953:105.—Fortes and Trono, 1980:56, fig. 5.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Boodleopsis verticillata Dawson

Boodleopsis verticillata Dawson, 1960:32, figs. 1A–D [type locality: Isla del Rey, Islas Perlas, Panama].—Fortes and Trono, 1980:58, fig. 6.—Fortes, 1981b:396.

PHILIPPINE DISTRIBUTION.—MINDORO: Oriental Mindoro.

Chlorodesmis* Harvey and Bailey**Chlorodesmis caespitosa* J. Agardh**

Chlorodesmis caespitosa J. Agardh, 1887:49 [type locality: Sri Lanka].—Ducker, 1967:157, pls. 27, 36–38; pl. 43: fig. 2.
Chlorodesmis formosana Yamada, 1925a:92, fig. V [syntype localities: various, all in Taiwan].—Gilbert, 1947:122; 1961:422.—Velasquez, Trono, and Doty, 1975:135.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.).

NOTE.—The synonymy was proposed by Ducker (1967:157).

***Chlorodesmis fastigiata* (C. Agardh) Ducker**

Vaucheria fastigiata C. Agardh, 1824:176 [type locality: Mariana Is.].
Chlorodesmis fastigiata (C. Agardh) Ducker, 1969:17.
Chlorodesmis comosa Harvey and Bailey, 1851:373 [type locality: Fiji].—Gilbert, 1947:122; 1961:442.—Meñez, 1961:55, pl. 2: figs. 20, 21.—Domantay, 1962:279.—Taylor, 1966b:352.—Ducker, 1967:160, pl. 28, 29, 39.—Gilbert and Doty, 1969:123.—Velasquez et al., 1973:13, pl. 3: fig. 14.—Trono, 1975:36.—Velasquez, Trono, and Doty, 1975:134.—Cordero, 1976c:6, 8; 1977b:35, pl. IV: figs. 18, 19.—Trono, 1978:6.—Trono and Tuason, 1978:4.—Cordero, 1979b:276.—Puig and Cordero, 1979:25.—Saraya and Trono, 1980:19, pl. IV: fig. 1.—Chan, 1981:387.—Trono and Ang, 1982:9.—Hurtado-Ponce, 1983:107.—Hurtado-Ponce and Modelo, 1983:146.—Marcos-Angarayngay, 1983:86, fig. 21.—Cordero, 1984a:79; 1984b:59.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan, Bataan, Quezon, Sorsogon. CATANDUANES. MARINDUQUE. LEYTE (Biliran I.). PANAY: Aklan. MINDANAO: Zamboanga, Davao. BASILAN. PALAWAN (incl. Bugsuk I., Cuyo I.).

NOTE.—The conspecificity of *Vaucheria fastigiata* and *Chlorodesmis comosa* was suggested by Gepp and Gepp (1911:15) and confirmed by Ducker (1969:17).

***Chlorodesmis hildebrandtii* A. Gepp and E.S. Gepp**

Chlorodesmis hildebrandtii A. Gepp and E.S. Gepp, 1911:16, 137, pl. 8: figs. 74, 75 [lectotype locality: Johanna (Anjouan) I., Comoro Is. fide Ducker, 1967:165].—Gilbert, 1947:122; 1961:442.—Taylor, 1966b:352.—Tanaka, 1967:16, fig. 4, pl. II:c.—Trono, 1973c:18.—Velasquez, Trono, and Doty, 1975:135.—Cordero, 1977b:35, pl. V: figs. 23–25.—Reyes, 1978:158, pl. 10: fig. 3.—Meñez and Calumpung, 1981:383.—Trono and De Lara, 1981:5, pl. III: fig. 4.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.). MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. SIKUIJOR. SULU: Tawitawi (Sibutu I.).

***Chlorodesmis major* Zanardini**

Chlorodesmis major Zanardini, 1874:504 [type locality: Lord Howe I.].
Chlorodesmis torresiensis W.R. Taylor, 1945:66 [type locality: Murray Is., Torres Strait, Australia].—Taylor, 1966b:352.—Velasquez, Trono, and Doty, 1975:135.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan.

NOTE.—The synonymy was proposed by Ducker (1967:167).

Rhipiliopsis* A. Gepp and E.S. Gepp***Rhipiliopsis carolyniae* Kraft**

Rhipiliopsis carolyniae Kraft, 1986:51, figs. 8–11 [type locality: Bulusan, Sorsogon Prov., Luzon].
Rhipiliopsis peltata [misapplied name.—Gilbert and Doty, 1969:122, figs. 9–12.—Velasquez, Trono, and Doty, 1975:161.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon. MINDANAO: Surigao.

Tydemania* Weber-van Bosse**Tydemania expeditionis* Weber-van Bosse**

Tydemania expeditionis Weber-van Bosse, 1901:139 [syntype localities: Macassar, Celebes and Sumbawa I., Indonesia].—Gilbert, 1947:122; 1961:444.—Taylor, 1966b:352.—Velasquez, 1971:432, fig. 10.—Trono, 1973c:17, fig. 15.—Trono, 1973d:10, pl. 6: fig. 22; 1975:40.—Velasquez, Trono, and Doty, 1975:166.—Trono and Young, 1977:55.—Reyes, 1978:158, pl. 10: fig. 4.—Trono and Tuason, 1978:8.—Cordero, 1979c:53, 57, 61, figs. 2, 3.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:24, pl. VI: fig. 4.—Meñez and Calumpung, 1981:383.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Sorsogon. CATANDUANES. MINDORO: Oriental Mindoro. SAMAR: Eastern Samar. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR. MINDANAO: Zamboanga. PALAWAN (Balabac I.). SULU: Sulu (Siasi I.), Tawitawi.

***Udotea* Lamouroux**

Farghaly (1980:245–262), in his treatment of *Udotea*, resurrected the genus *Rhipidosiphon* Montagne (1842a:14) and recognized three new segregate genera: *Decaisnella*, *Geppina*, and *Howella*. The new generic names are invalid because they lack Latin diagnoses. The species of *Udotea* in this catalog are distributed by Farghaly as follows: *Udotea* (*U. argentea*, *U. flabellum*, *U. occidentalis*); *Decaisnella* (*U. indica*); and *Rhipidosiphon* (*U. glaucescens*, *U. javensis*, *U. orientalis*). The generic placement of *U. geppii* was not indicated.

***Udotea argentea* Zanardini**

Udotea argentea Zanardini, 1858:290, pl. XII: fig. 1 [type locality: Suez, Egypt].—Trono, 1972a:98.—Cordero, 1976c:8 [f. *typica*]; 1977b:37 [f. *typica*]; 1979b:278.—Trono and Ang, 1982:12.

PHILIPPINE DISTRIBUTION.—BATANES. PANAY: Aklan. PALAWAN (Bugsuk I.). SULU: Tawitawi.

****Udotea argentea* Zanardini var. *spumosa* A. Gepp and E.S. Gepp**

Udotea argentea Zanardini var. *spumosa* A. Gepp and E.S. Gepp, 1911:126, 144 [syntype localities: Tanah Djampeah and Saleyer (Selajar) I., Indonesia; Pearl Bank, Tawitawi Prov., Sulu Archipelago].—Weber-van Bosse, 1913a:117.—Gilbert, 1946:78; 1947:123; 1961:444.—Taylor, 1966b:352.—Gilbert and Doty, 1969:124, fig. 6.—Velasquez, Trono, and Doty, 1975:166 [without designation of forma].

PHILIPPINE DISTRIBUTION.—PALAWAN (incl. Balabac I., Culion I., Cuyo I.). SULU: Tawitawi (Pearl Bank, Turtle Is.).

***Udotea flabellum* (Ellis and Solander) Howe**

Corallina flabellum Ellis and Solander, 1786:124, pl. 24 [type locality: West Indies].

Udotea flabellum (Ellis and Solander) Howe, 1904:94.—Gepp and Gepp, 1911:131, pl. III: figs. 26–28.—Weber-van Bosse, 1913a:118.—Gilbert, 1946:78; 1947:123; 1961:444.—Reyes, 1972:144.—Velasquez, Trono, and Doty, 1975:166.

PHILIPPINE DISTRIBUTION.—NEGROS: Negros Oriental. MINDANAO: Zamboanga. SULU: Sulu (North Ubian I.).

***Udotea geppii* Yamada**

Udotea geppii Yamada, 1930a:141, figs. 1–3 [syntype localities: Palau (Belau), Caroline Is.; Tonga].—Reyes, 1978:161, pl. 11: fig. 10.—Fortes and Trono, 1980:66.—Trono and Ang, 1982:12.

PHILIPPINE DISTRIBUTION.—SAMAR. SIQUIJOR. PALAWAN (Bugsuk I.).

***Udotea glaucescens* Harvey ex J. Agardh**

Udotea glaucescens Harvey ex J. Agardh, 1887:70 [type locality: Tonga].—Gilbert and Doty, 1969:124.—Velasquez, Trono, and Doty, 1975:166.

PHILIPPINE DISTRIBUTION.—CATANDUANES.

***Udotea indica* A. Gepp and E.S. Gepp**

Udotea indica A. Gepp and E.S. Gepp, 1911:121, pl. II: figs. 13, 14; pl. VI: figs. 52, 53 [type locality: Karachi, Pakistan].—Cordero, 1973b:22; 1976c:6, 11; 1977b:37, pl. IV: figs. 16, 17.—Puig and Cordero, 1979:29.—Cordero, 1984a:82.

Decaisnella indica (A. Gepp and E.S. Gepp) Farghaly, 1980:257 [including Philippine record].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte. LEYTE (Biliran I.).

NOTE.—The generic name *Decaisnella* was not validly published so that the binomial *D. indica* is also invalid.

***Udotea javensis* (Montagne) A. Gepp and E.S. Gepp**

Rhipidosiphon javensis Montagne, 1842a:15 [type locality: Java, Indonesia]. *Udotea javensis* (Montagne) A. Gepp and E.S. Gepp, 1904:364.—Gilbert, 1947:122; 1961:445.—Villones and Magdamo, 1968:26, fig. 15 [figure

cited but not published].—Gilbert and Doty, 1969:125.—Trono, 1973c:19.—Velasquez, Trono, and Doty, 1975:166.—Cordero, 1979c:55, 56, 61, fig. 1.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:23, pl. VI: fig. 3.—Meñez and Calumpo, 1981:383.—Cordero, 1984c:52.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Batangas. MINDORO: Oriental Mindoro. MASBATE. SAMAR: Western Samar, Eastern Samar. PANAY: Aklan. CEBU (Mactan I.). BASILAN. PALAWAN (incl. Cuyo I.).

***Udotea occidentalis* A. Gepp and E.S. Gepp**

Udotea occidentalis A. Gepp and E.S. Gepp, 1911:127, 144, pl. II: figs. 18, 22a,b; pl. VII: figs. 63–65 [syntype localities: St. Thomas and St. Jan (St. John), Virgin Is.].—Trono, 1975:36.

PHILIPPINE DISTRIBUTION.—LUZON: Sorsogon.

****Udotea orientalis* A. Gepp and E.S. Gepp**

Udotea orientalis A. Gepp and E.S. Gepp, 1911:119, 142, pl. I: figs. 1, 4; pl. VI: figs. 47, 48 [syntype localities: various in Indian and Pacific oceans and Indonesia; North Ubian I., Sulu Prov., Sulu Archipelago].—Weber-van Bosse, 1913a:117.—Gilbert, 1946:78; 1947:122; 1961:445.—Meñez, 1961:56, pl. 2: figs. 22–25.—Taylor, 1966b:353.—Gilbert and Doty, 1969:125, fig. 4.—Reyes, 1972:144.—Cordero, 1973b:22.—Trono, 1973c:19, fig. 24.—Velasquez et al., 1973:15, pl. 5: fig. 23.—Velasquez, Trono, and Doty, 1975:167.—Cordero, 1976c:8; 1977b:38, pl. V: figs. 27–29.—Trono and Young, 1977:55.—Trono, 1978:8.—Trono and Tuason, 1978:8.—Cordero, 1979b:276.—Puig and Cordero, 1979:29.—Saraya and Trono, 1980:24, pl. VI: fig. 2.—Meñez and Calumpo, 1981:383.—Trono and De Lara, 1981:6, pl. IV: fig. 4.—Trono and Ang, 1982:12.—Hurtado-Ponce, 1983:119.—Hurtado-Ponce and Modelo, 1983:149.—Marcos-Angarayngay, 1983:93, fig. 25.—Cordero, 1984a:82.

Rhipidosiphon orientalis (A. Gepp and E.S. Gepp) Farghaly, 1980:254 [including Philippine record].

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Pangasinan, Zambales, Bataan, Quezon, Albay, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. MINDANAO: Surigao. PALAWAN (incl. Balabac I., Bugsuk I.). SULU: Sulu (North Ubian I.), Tawitawi (Turtle Is.).

Order DASYCLADALES

Family DASYCLADACEAE

***Bornetella* Munier-Chalmas**

***Bornetella nitida* Munier-Chalmas ex Sonder**

Bornetella nitida Munier-Chalmas ex Sonder, 1880:39 [type locality: Tonga].—Gilbert, 1943:25, fig. 1e,f; 1961:443.—Meñez, 1961:50, pl. 1: figs. 6–9.—Taylor, 1966b:347.—Valet, 1969:588.—Reyes, 1972:141.—Trono, 1972a:99.—Cordero, 1973b:18.—Trono, 1973a:128, fig. 2.—Ortega, Alcalá, and Reyes, 1974:186, 188.—Trono,

1975:40.—Velasquez, Trono, and Doty, 1975:129.—Cordero, 1976c:8; 1977b:24, pl. II: figs. 7, 8.—Reyes, 1978:150, pl. 5: fig. 10.—Trono and Tuason, 1978:10.—Cordero, 1979b:276, 282.—Puig and Cordero, 1979:22.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:25.—Hurtado-Ponce, 1983:113.—Hurtado-Ponce and Modelo, 1983:148.—Marcos-Agngarayngay, 1983:100, fig. 31.—Cordero, 1984b:58; 1984c:51.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Sorsogon, CATANDUANES. MINDORO: Oriental Mindoro. MASBATE. LEYTE (Biliran I.). PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR. BOHOL. PALAWAN. SULU: Tawitawi.

NOTE.—This species was distributed by Harvey in his *Friendly Islands exsiccatae* (1857) under the name *Neomeris nitida*, without a description. Munier-Chalmas (1877:816) established the genus *Bornetella* on the basis of *Neomeris nitida*, but without publishing the binomial *B. nitida*. Sonder appears to be the first author to use that binomial, although he accredited it to Munier-Chalmas. Because *Neomeris nitida* remained a *nomen nudum*, Harvey's name does not appear in the authorship.

Bornetella oligospora Solms-Laubach

Bornetella oligospora Solms-Laubach, 1892:87, pl. IX: figs. 1–4, 6, 7 [syn-type localities: Macassar, Celebes and Bari, Flores, Indonesia].—Weber-van Bosse, 1913a:89.—Gilbert, 1943:26, fig. 1g–i; 1946:78; 1961:433 [*"sphaerica"* in error].—Domantay, 1962:277.—Valet, 1969:589.—Trono, 1973c:21.—Velasquez, Trono, and Doty, 1975:129.—Trono and Young, 1977:57.—Trono and Tuason, 1978:10.—Meñez and Calumpang, 1981:383.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CATANDUANES. MINDORO: Oriental Mindoro. CENTRAL VISAYAS. PALAWAN. SULU: Tawitawi (Sangasiapu I.).

Bornetella ovalis Yamada

Bornetella ovalis Yamada, 1933:277 [type locality: Ryukyu-retto, Japan].—Domantay, 1962:277.—Velasquez, Trono, and Doty, 1975:129.—Cordero, 1984c:51.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. MASBATE.

Bornetella sphaerica (Zanardini) Solms-Laubach

Neomeris ? *sphaerica* Zanardini, 1878:38 [type locality: Sorong, Irian Barat, Indonesia].

Bornetella sphaerica (Zanardini) Solms-Laubach, 1892:80, pl. IX: fig. 8.—Weber-van Bosse, 1913a:90.—Gilbert, 1943:22, fig. 1a,b; 1946:78; 1961:433.—Domantay, 1962:277.—Taylor, 1966b:347.—Reyes, 1972:141.—Trono, 1972a:99; 1973c:21; 1973d:10; 1975:41.—Velasquez, Trono, and Doty, 1975:129.—Trono and Young, 1977:57.—Reyes, 1978:150, pl. 6: fig. 1.—Trono, 1978:8.—Trono and Tuason, 1978:10.—Cordero, 1979b:276.—Liao and Sotto, 1980:97.—Meñez and Calumpang, 1981:383.—Trono and De Lara, 1981:7, pl. IV: fig. 2.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. SAMAR: Eastern Samar. PANAY: Aklan. NEGROS: Negros Oriental. CEBU (Mactan I.). SIKUIJOR. BOHOL. BASILAN. SULU: Tawitawi (incl. Sangasiapu I.).

Chlorocladus Sonder

Chlorocladus australasicus Sonder

Chlorocladus australasicus Sonder, 1871:67, pl. V: figs. 1–6 [type locality: Cape York, Queensland, Australia].

Dasycladus australasicus (Sonder) De Toni, 1889:411.—Taylor, 1966b:345.—Velasquez, Trono, and Doty, 1975:140 [*"australicus"*].

PHILIPPINE DISTRIBUTION.—CATANDUANES.

NOTE.—A specimen in UC, collected in Aklan Province, Panay, and published as *Dasycladus* sp. by Cordero (1979b:282), was determined as *Chlorocladus australasicus* by I.R. Price, 27 January 1982.

**Chlorocladus philippinensis* Gilbert

Chlorocladus philippinensis Gilbert, 1978:305, figs. 1–8 [type locality: Solong-on, Siquijor].—Meñez and Calumpang, 1981:383.

PHILIPPINE DISTRIBUTION.—CATANDUANES. SIKUIJOR.

NOTE.—Gilbert was unable to confirm Taylor's record of *Chlorocladus australasicus* because he could not locate the cited specimen. Probably only one species of *Chlorocladus* is represented in the Philippines, but whether it is distinct from Sonder's species remains to be investigated (see Price, 1981:175).

Cymopolia Lamouroux

Cymopolia vanbosseae Solms-Laubach

Cymopolia vanbosseae Solms-Laubach, 1892:78, pl. VIII: figs. 9, 10, 14–16 [*"van Bossei"*] [type locality: Maumere, Flores, Indonesia].—Gilbert, 1943:20; 1961:433.—Gilbert and Doty, 1969:125, fig. 16.—Velasquez, Trono, and Doty, 1975:140.—Cordero, 1979b:276.—Meñez and Calumpang, 1981:383.—Hurtado-Ponce, 1983:113.—Hurtado-Ponce and Modelo, 1983:148.—Marcos-Agngarayngay, 1983:100, fig. 32.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Zambales. CATANDUANES. PANAY: Aklan. CEBU. MINDANAO: Surigao.

Dasycladus C. Agardh

Dasycladus vermicularis (Scopoli) Krasser

Spongia vermicularis Scopoli, 1771:412, pl. 64: no. 1454 [type locality: Adriatic Sea].

Dasycladus vermicularis (Scopoli) Krasser in Beck and Zahlbruckner, 1898:459.—Reyes, 1978:150, pl. 5: fig. 8.

PHILIPPINE DISTRIBUTION.—SIQUIJOR.

*Neomeris Lamouroux**Neomeris annulata* Dickie

Neomeris annulata Dickie, 1874a:198 [type locality: Mauritius].—Gilbert, 1943:19; 1961:434.—Meñez, 1961:50, pl. 1: figs. 1–3.—Cordero, 1973b:18.—Velasquez et al., 1973:10, pl. 2: fig. 6.—Velasquez, Trono, and Doty, 1975:156.—Cordero, 1976c:8; 1977b:24.—Vannajan and Trono, 1977:45, fig. 9.—Cordero, 1979b:276.—Puig and Cordero, 1979:21.—Liao and Sotto, 1980:97.—Meñez and Calumpong, 1981:383.—Hurtado-Ponce, 1983:113 [with query].—Hurtado-Ponce and Modelo, 1983:148 [with query].—Marcos-Angarayngay, 1983:98, fig. 30.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Ilocos Norte, Pangasinan, Bataan, Cavite, Batangas. MINDORO: Oriental Mindoro. LEYTE (Biliran I.). PANAY: Aklan. CEBU (Mactan I.).

Neomeris vanbosseae Howe

Neomeris vanbosseae Howe, 1909:80, pl. 1: figs. 4, 7; pl. 5: figs. 17–19 ["*van Bosseae*"] [type locality: Sikka, Flores, Indonesia].—Gilbert, 1943:17; 1961:434.—Meñez, 1961:50, pl. 1: figs. 4, 5.—Domantay, 1962:281.—Taylor, 1966b:347.—Valet, 1969:596.—Reyes, 1972:141.—Trono, 1972a:99; 1973c:20, fig. 20.—Ortega, Alcala, and Reyes, 1974:187, 188.—Westernhagen, 1974:112 (table I).—Velasquez, Trono, and Doty, 1975:156.—Cordero, 1976c:8; 1977b:24, pl. II: fig. 6.—Reyes, 1978:150, pl. 5: fig. 9.—Trono and Tuason, 1978:11.—Liao and Sotto, 1980:97.—Saraya and Trono, 1980:25.—Trono and Ganzon-Fortes, 1980:35, fig. [s.n].—Meñez and Calumpong, 1981:383.

PHILIPPINE DISTRIBUTION.—BATANES. LUZON: Pangasinan, Bataan, Batangas, Quezon. CATANDUANES. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental. CEBU (Mactan I.). SIQUIJOR. PALAWAN (Balabac I.). SULU: Tawitawi.

Family POLYPHYSACEAE

The families Dasycladaceae and Polyphysaceae were described simultaneously by Kützing (1843). The latter, which included *Polyphysa* and *Acetabularia*, was merged into the former by subsequent workers, but was resurrected by Hauck (1884 [1883–1885]:421) under the name *Acetabulariaceae*.

*Acetabularia Lamouroux**Acetabularia calyculus* Lamouroux

Acetabularia calyculus Lamouroux in Quoy and Gaimard, 1824:621, pl. 90: figs. 6, 7 ["*calyculus*"] [type locality: Shark Bay, Western Australia, Australia].—Dickie, 1877:489.—Gilbert, 1943:33; 1946:78; 1961:433.—Villones and Magdamo, 1968:12, fig. 3.—Velasquez et al., 1973:11, pl. 2: fig. 8.—Velasquez, Trono, and Doty, 1975:125.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. CEBU.

Acetabularia clavata Yamada

Acetabularia clavata Yamada, 1934:57, figs. 24, 25 [type locality: Tomari, Okinawa-gunto, Ryukyu-retto, Japan].—Trono and Santiago, 1972:43.—Trono, Santiago, and Ganzon-Fortes, 1978:87, fig. 5d.

PHILIPPINE DISTRIBUTION.—LUZON: Batangas. CATANDUANES.

NOTE.—*Polyphysa* Lamarck (1816:151), characterized by the lack of an inferior corona, is usually treated as a section of *Acetabularia*, following the monograph of Solms-Laubach (1895:21). Recently, however, it has been resurrected at the generic level (Bailey, Rezak, and Cox, 1976) and *Acetabularia clavata* transferred to it (Schnetter and Meyer, 1982:41).

Acetabularia crenulata Lamouroux

Acetabularia crenulata Lamouroux, 1816:249, pl. VIII: fig. 1 [type locality: Caribbean Sea].—Velasquez, 1971:432, fig. 8.—Vannajan and Trono, 1977:45, figs. 10, 11.—Reyes, 1978:151, pl. 6: figs. 3, 4.

PHILIPPINE DISTRIBUTION.—LUZON: Zambales, Cavite, Albay. PANAY: Iloilo. SIQUIJOR. PALAWAN.

Acetabularia dentata Solms-Laubach

Acetabularia dentata Solms-Laubach, 1895:23, pl. 1: fig. 11 [syntype localities: various, all in Indonesia].—Gilbert, 1943:30, fig. 2d–f; 1961:433.—Gilbert and Doty, 1969:126, figs. 18, 19.—Reyes, 1972:141.—Trono and Santiago, 1972:44.—Trono, 1973c:21.—Velasquez, Trono, and Doty, 1975:125.—Trono, Santiago, and Ganzon-Fortes, 1978:84, fig. 3.—Liao and Sotto, 1980:97.—Fortes, 1981b:396.—Meñez and Calumpong, 1981:383.—Hurtado-Ponce, 1983:112.—Hurtado-Ponce and Modelo, 1983:148.

PHILIPPINE DISTRIBUTION.—LUZON: Cagayan (Babuyan Is.), Ilocos Norte, Batangas. CATANDUANES. MINDORO: Oriental Mindoro. NEGROS: Negros Oriental. CEBU (Mactan I.). MINDANAO: Surigao.

Acetabularia exigua Solms-Laubach

Acetabularia exigua Solms-Laubach, 1895:28, pl. 2: figs. 1, 4 [syntype localities: Macassar, Celebes and Sikka, Flores, Indonesia].—Trono and Santiago, 1972:42.—Trono, Santiago, and Ganzon-Fortes, 1978:84, 87, fig. 4b–f.—Saraya and Trono, 1980:25.—Meñez and Calumpong, 1981:383.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Batangas. CENTRAL VISAYAS.

Acetabularia major Martens

Acetabularia major Martens, 1868:25, pl. IV: fig. 3 [type locality: "Simaharadscha" (Ban Si Racha ?), Thailand].—Howe, 1932:169.—Gilbert,

1943:29, fig. 2a-c; 1946:78.—Zaneveld, 1950:109.—Montilla and Blanco, 1953:166.—Zaneveld, 1956:5; 1959:92.—Gilbert, 1961:433.—Meñez, 1961:51, pl. 1: figs. 10-12.—Domantay, 1962:276, 277.—Gilbert and Doty, 1969:126, fig. 17.—Trono and Santiago, 1972:44.—Trono, 1973c:21.—Velasquez et al., 1973:11, pl. 2: fig. 9.—Velasquez, Trono, and Doty, 1975:125.—Trono and Young, 1977:57.—Trono, Santiago, and Ganzon-Fortes, 1978:79, fig. 1.—Trono and Tuason, 1978:9.—Cordero, 1979b:276.—Puig and Cordero, 1979:22.—Meñez and Calumpong, 1981:383.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan, Zambales, Batangas. CATANDUANES. MINDORO: Oriental Mindoro. LEYTE (Biliran I.). PANAY (incl. Aklan).

Acetabularia minutissima Okamura

Acetabularia minutissima Okamura, 1912 [1909-1912]:184, pl. c: figs. 7-11 [syntype localities: Futae, Amakusa Is. and Hyuga Prov. (Miyazaki Prefecture), Japan].—Meñez, 1961:51.—Velasquez, Trono, and Doty, 1975:125.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan.

Acetabularia parvula Solms-Laubach

Acetabularia parvula Solms-Laubach, 1895:29, pl. 2: figs. 3, 5 [syntype localities: "Tropical India"; Macassar, Celebes, Indonesia].

Acetabularia moebii Solms-Laubach, 1895:30, pl. 4: fig. 1 [type locality: Mauritius].—Trono and Santiago, 1972:43.—Cordero, 1973b:18.—Trono, Santiago, and Ganzon-Fortes, 1978:87, fig. 4a.—Puig and Cordero, 1979:22.—Saraya and Trono, 1980:24.—Meñez and Calumpong, 1981:383.—Hurtado-Ponce, 1983:112.—Hurtado-Ponce and Modelo, 1983:148.—Marcos-Agngarayngay, 1983:98, fig. 29.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan. CATANDUANES. LEYTE (Biliran I.). CENTRAL VISAYAS.

NOTE.—The synonymy was proposed by Valet (1969:621). This species was transferred to *Polyphysa* by Schnetter and Meyer (1982:42).

**Acetabularia roxasii* Trono

Acetabularia roxasii Trono, Santiago, and Ganzon-Fortes, 1978:80, fig. 2. [type locality: Calatagan, Batangas Prov., Luzon].

PHILIPPINE DISTRIBUTION.—As above.

Acetabularia ryukyuensis Okamura and Yamada

Acetabularia ryukyuensis Okamura and Yamada in Okamura, 1932a [1929-1932]:71, pl. CCLXXXV: figs. 5-12 [type locality: Ryukyu-retto,

Japan].—Cordero, 1979b:282.—Puig and Cordero, 1979:22.

PHILIPPINE DISTRIBUTION.—LEYTE (Biliran I.). PANAY: Aklan.

**Acetabularia ryukyuensis* Okamura and Yamada var. *philippinensis* (Gilbert) Valet

Acetabularia philippinensis Gilbert, 1943:31, fig. 3 [type locality: Taytay, Palawan].—Gilbert, 1961:433.—Taylor, 1966b:347.—Velasquez, Trono, and Doty, 1975:125.—Trono and Tuason, 1978:9.

Acetabularia ryukyuensis Okamura and Yamada var. *philippinensis* (Gilbert) Valet, 1969:613, pl. 154 (43): fig. 12.

PHILIPPINE DISTRIBUTION.—LUZON: Pangasinan. CATANDUANES. PALAWAN.

**Acetabularia velasquezii* Trono, Santiago, and Ganzon-Fortes

Acetabularia velasquezii Trono, Santiago, and Ganzon-Fortes, 1978:87, fig. 5a-c [type locality: Minabalay I., Barrio Danao, Baras, Catanduanes].

PHILIPPINE DISTRIBUTION.—As above.

Halicoryne Harvey

Halicoryne wrightii Harvey

Halicoryne wrightii Harvey, 1860a:333 [type locality: Ryukyu-retto, Japan].—Solms-Laubach, 1895:31.—Gilbert, 1943:27; 1946:78; 1961:433.—Meñez, 1961:51.—Domantay, 1962:281.—Taylor, 1966b:346.—Valet, 1969:603.—Velasquez, 1971:432, fig. 9.—Reyes, 1972:141.—Cordero, 1973b:19.—Velasquez et al., 1973:11, pl. 2: fig. 7.—Westernhagen, 1973a:64.—Ortega, Alcala, and Reyes, 1974:188.—Westernhagen, 1974:112 (table I).—Trono, 1975:40.—Velasquez, Trono, and Doty, 1975:147, 149 [*"Halicoryne wrightii"*].—Trono and Young, 1977:57.—Reyes, 1978:150, pl. 6: fig. 2.—Trono, 1978:8.—Trono and Tuason, 1978:10.—Cordero, 1980a:29, 34, fig. 3.—Liao and Sotto, 1980:97.—Meñez and Calumpong, 1981:383.—Trono and De Lara, 1981:7, pl. IV: fig. 3.—Cordero, 1984a:76.

Polyphysa spicata [misapplied name fide Solms-Laubach, 1895:31].—Dickie, 1876a:243.—Gilbert, 1961:434.—Velasquez, Trono, and Doty, 1975:160.

PHILIPPINE DISTRIBUTION.—LUZON: Ilocos Norte, Pangasinan, Zambales, Bataan, Albay, Sorsogon. CATANDUANES. MINDORO: Occidental Mindoro (Lubang Is.), Oriental Mindoro. MARINDUQUE. LEYTE (Biliran I.). PANAY. NEGROS: Negros Oriental. CEBU (Mactan I.). SIQUIJOR. BOHOL.

Records Determined Only To Genus

(Genera marked with an asterisk (*) have not been otherwise reported from the Philippines, or (in the case of Cyanophyceae) at least not from marine habitats.)

CYANOPHYCEAE

- Anabaina*
Reyes, 1972:136 [*Anabaena*]. NEGROS: Negros Oriental.
- **Aphanocapsa*
Agor, 1962:33. LUZON: Pangasinan.
- Calothrix*
Cornejo and Velasquez, 1972:172, pl. 1: fig. 3. LUZON: Batangas.
Vannajan and Trono, 1977:37-38. LUZON: Cavite.
- **Coccochloris*
Reyes, 1972:135. NEGROS: Negros Oriental.
- Entophysalis*
Reyes, 1978:139, pl. 1: figs. 3, 4. SQUIJOR.
- **Gloeotrichia*
Velasquez, 1980:127 (table 1) [no description or collecting data]. MINDORO: Oriental Mindoro.
- Hormothamnium*
Villones and Magdamo, 1968:11. LUZON: Batangas.
Reyes, 1972:136. NEGROS: Negros Oriental.
- Lyngbya*
Vannajan and Trono, 1977:37. LUZON: Cavite.
- Oscillatoria*
Vannajan and Trono, 1977:36. LUZON: Cavite.
- Rivularia*
Domantay, 1962:276. LUZON: Pangasinan.
- Schizothrix*
Reyes, 1978:140, pl. 2: figs. 3, 4. SQUIJOR.
- Symploca*
Domantay, 1962:276. LUZON: Pangasinan.

RHODOPHYCEAE

- Acrochaetium*
Cornejo and Velasquez, 1972:178, pl. 2: fig. 17. LUZON: Batangas.
- **Agardhiella*
Seale, 1911:309 [no description; see *Gracilaria verrucosa* in catalog].
Quisumbing, 1951:1007. LUZON: Manila Bay.
Zaneveld, 1956:26. LUZON: Manila Bay.
Zaneveld, 1959:107. LUZON: Manila Bay.
- Ahnfeltia*
Cordero, 1978a:42. BATANES.
- Amansia*
Meñez, 1961:75, pl. 8: figs. 92-94. LUZON: Pangasinan.
- Amphiroa*
Villones and Magdamo, 1968:30, fig. 33. LUZON: Batangas.
Reyes, 1972:153. NEGROS: Negros Oriental.
Trono and Biña, 1973:5. MINDORO: Oriental Mindoro.
Trono, 1974b:86. SULU: Sulu (Siasi I.).
Reyes, 1980:131, pl. 7: figs. 1, 2. SQUIJOR.
Cordero, 1984a:95. LUZON: Ilocos Norte.
- Antithamnion*
Vannajan and Trono, 1978:23, figs. 26, 27. LUZON: Cavite.
- Asterocytis*
Vannajan and Trono, 1978:14. LUZON: Cavite.
- **Calliarthron*
Cordero, 1979b:276. PANAY: Aklan.

**Callithamnion*

- Vannajan and Trono, 1978:23, fig. 28. LUZON: Cavite.
- Callophyllis*
Cordero, 1979b:290. PANAY: Aklan.
Reyes, 1980:134, pl. 9: figs. 1, 2. SQUIJOR.
Cordero, 1984a:97. LUZON: Ilocos Norte.
- Carpopeltis*
Meñez, 1961:73. LUZON: Pangasinan.
Reyes, 1972:154. NEGROS: Negros Oriental.
Cordero, 1973b:31. LEYTE (Biliran I.).
Trono and Biña, 1973:3. MINDORO: Oriental Mindoro.
- Centroceras*
Domantay, 1962:288. LUZON: Pangasinan.
- Ceramium*
Cornejo and Velasquez, 1972:183, pl. 3: fig. 26; pl. 5: fig. 39. LUZON: Batangas.
Trono, 1972:106. SULU: Tawitawi.
Trono, 1973d:20. MINDANAO: Zamboanga.
Reyes, 1980:138, pl. 12, figs. 1a,b. SQUIJOR.
Trono and Ang, 1982:22. PALAWAN (Bugsuk I.).
Cordero, 1984a:104. LUZON: Ilocos Norte.
- Champia*
Meñez, 1961:78. LUZON: Pangasinan.
Cornejo and Velasquez, 1972:179, pl. 4: fig. 35. LUZON: Batangas.
- Chondria*
Cornejo and Velasquez, 1972:179-180, pl. 2: figs. 19, 20; pl. 3: fig. 21. LUZON: Batangas.
- **Chondrus*
Cordero, 1984a:103 [with query]. LUZON: Ilocos Norte.
- **Chrysomenia*
Reyes, 1972:157. NEGROS: Negros Oriental.
Trono, 1973a:135, fig. 7. LUZON: Sorsogon.
- Corallina*
Reyes, 1972:153. NEGROS: Negros Oriental.
Reyes, 1980:131, pl. 7: fig. 3. SQUIJOR.
- Cryptonemia*
Reyes, 1980:133, pl. 8: fig. 4. SQUIJOR.
Marcos-Agngarayngay, 1983b:39, fig. 32. LUZON: Ilocos Norte.
- **Dicranema*
Trono, 1974b:93. SULU: Sulu (Siasi I.).
- Eupogodon*
Reyes, 1972:158 [as *Dasyopsis*]. NEGROS: Negros Oriental.
- Erythrotrichia*
Cornejo and Velasquez, 1972:177, pl. 2: fig. 14; pl. 4: fig. 32. LUZON: Batangas.
Vannajan and Trono, 1978:14, fig. 12. LUZON: Cavite.
- Eucheuma*
Cordero, 1973b:31. LEYTE (Biliran I.).
Reyes, 1980:136, pl. 10: fig. 4. SQUIJOR.
Cordero, 1984a:99. LUZON: Ilocos Norte.
- Faucheia*
Reyes, 1972:158. NEGROS: Negros Oriental.
- Galaxaura*
Trono and De Lara, 1981:13, pl. VIII: fig. 4. MINDORO: Occidental Mindoro (Lubang Is.).
Cordero, 1984a:91. LUZON: Ilocos Norte.

Gelidiella

Trono and Biña, 1973:3. MINDORO: Oriental Mindoro.

Gelidiopsis

Cordero, 1973b:30. LEYTE (Biliran I.).
Reyes, 1980:129-130, pl. 6: figs. 3, 4. SIKUIJOR.
Cordero, 1984a:100. LUZON: Ilocos Norte.

Gelidium

Cordero, 1973b:30. LEYTE (Biliran I.).
Cordero, 1978a:23. BATANES.

Gracilaria

Collado, 1926:129. LUZON: Cagayan, Ilocos.
Reyes, 1972:155-156. NEGROS: Negros Oriental.
Cordero, 1973b:33. LEYTE (Biliran I.).
Trono, 1973d:18, pl. 9: fig. 4. LUZON: Pangasinan. SAMAR: Eastern Samar. NEGROS: Negros Oriental. MINDANAO: Zamboanga.
Vannajan and Trono, 1978:22, fig. 25. LUZON: Rizal.
Saraya and Trono, 1982:41. LUZON: Pangasinan.
Trono and Ang, 1982:20. PALAWAN (Bugsuk I.).
Trono, Azanza-Corrales, and Manuel, 1983:34-41, figs. 8, 9a, 10, 11b. LUZON: Rizal, Cavite. SULU: Sulu (Siasi I.).
Cordero, 1984a:103. LUZON: Ilocos Norte.

Grateloupia

Trono, 1973d:16. LUZON: Pangasinan.
Reyes, 1980:133, pl. 8: fig. 3. SIKUIJOR.
Marcos-Angarayangay, 1983c:126. LUZON: Ilocos Norte.
Cordero, 1984a:97. LUZON: Ilocos Norte.

Griffithsia

Reyes, 1972:158. NEGROS: Negros Oriental.
Reyes, 1980:138, pl. 11: figs. 6a,b. SIKUIJOR.

Gymnogongrus

Reyes, 1980:137, pl. 11: fig. 1. SIKUIJOR.

Halymenia

Vannajan and Trono, 1978:18. LUZON: Cavite.
Cordero, 1980:49, fig. 11b, pl. 31. SAMAR: West Samar.
Hurtado-Ponce, 1983a:138. LUZON: Ilocos Norte.

Herposiphonia

Cornejo and Velasquez, 1972:181, pl. 3: figs. 23, 23a. LUZON: Batangas.
Trono, 1973d:21, pl. 10: fig. 8. MINDANAO: Zamboanga.
Trono and De Lara, 1981:20. MINDORO: Occidental Mindoro (Lubang Is.).

**Heteroderma*

Saraya and Trono, 1982:35. LUZON: Pangasinan.

Hypnea

Collado, 1926:129. LUZON: Cagayan, Ilocos.
G. Blanco, 1938:513. LUZON: Cagayan (incl. Babuyan Is.).
Reyes, 1972:156. NEGROS: Negros Oriental.
Trono, 1972:105. SULU: Tawitawi.
Trono, 1973d:17. CEBU. MINDANAO: Zamboanga (incl. Sacol I.).
Cordero, 1978a:41. BATANES.

Jania

Cordero, 1984a:95. LUZON: Ilocos Norte.
Cordero, 1984c:54. MASBATE.

Kallymenia

Marcos-Angarayangay, 1983c:126. LUZON: Ilocos Norte.

Laurencia

Meñez, 1961:77. LUZON: Pangasinan.
Reyes, 1972:159. NEGROS: Negros Oriental.
Trono, 1972:108. SULU: Tawitawi.
Trono, 1973d:22. LUZON: Pangasinan, Quezon. MINDANAO: Zamboanga.
Trono and Ganzon-Fortes, 1980:105, fig. [s.n.]. LUZON: Batangas.
Trono and Ang, 1982:26. PALAWAN (Bugsuk I.).
Cordero, 1984a:108. LUZON: Ilocos Norte.

**Leptofauchea*

Reyes, 1972:157. NEGROS: Negros Oriental.

Ortega, Alcala, and Reyes, 1974:186, 187, 188 [no description or collecting data]. NEGROS: Negros Oriental.

Liagora

Domantay, 1962:292. LUZON: Pangasinan.
Trono and De Lara, 1981:11-12, pl. VII: fig. 2. MINDORO: Occidental Mindoro (Lubang Is.).
Cordero, 1984a:87. LUZON: Ilocos Norte.

Lithophyllum

Howe, 1932:169. PANAY.
Reyes, 1980:132, pl. 7: figs. 6, 7. SIKUIJOR.

Lomentaria

Vannajan and Trono, 1978:23, fig. 30. LUZON: Manila, Cavite.

Lophosiphonia

Reyes, 1980:141, pl. 13: figs. 4a-c. SIKUIJOR.

Martensia

Trono, 1974b:94. SULU: Sulu (Siasi I.).

**Melobesia*

Reyes, 1972:153. NEGROS: Negros Oriental.

Microcladia

Tahil, 1978:52 [no description or collecting data]. CEBU (Mactan I.).

Murrayella

Trono, 1973a:136. MINDORO: Oriental Mindoro.

Peyssonnelia

Reyes, 1972:154. NEGROS: Negros Oriental.
Cordero, 1984a:93. LUZON: Ilocos Norte.

Polysiphonia

Domantay, 1962:293. LUZON: Pangasinan.
Reyes, 1972:158. NEGROS: Negros Oriental.
Trono, 1972:107. SULU: Tawitawi.
Trono, 1973d:21, pl. 10: fig. 7. MINDANAO: Zamboanga.
Reyes, 1980:141, pl. 13: figs. 3a,b. SIKUIJOR.

Porphyra

Bersamin et al., 1973:188. LUZON: Cagayan, Ilocos.

Pterocladia

Reyes, 1980:129, pl. 6: fig. 2. SIKUIJOR.

Rhodopeltis

Trono, 1973a:133, fig. 4. LUZON: Sorsogon.

Rhodymenia

Trono, 1973a:136, fig. 15. LUZON: Sorsogon.
Trono and Biña, 1973:10. MINDORO: Oriental Mindoro.
Cordero, 1978a:43. BATANES.
Cordero, 1980c:72, fig. 4. LUZON: Ilocos Norte.
Reyes, 1980:137, pl. 11: fig. 3. SIKUIJOR.
Trono and De Lara, 1981:19, pl. XI: fig. 3. MINDORO: Occidental Mindoro (Lubang Is.).
Marcos-Angarayangay, 1983b:53, fig. 44. LUZON: Ilocos Norte.
Cordero, 1984a:103. LUZON: Ilocos Norte.

Sarcodia

Trono, 1973d:18 [with query]. NEGROS: Negros Oriental.
Cordero, 1978a:35. BATANES.

Scinaia

Trono, 1973a:130, fig. 5. LUZON: Sorsogon.

**Spermothamnion*

Westernhagen, 1973b: 368 [no description or collecting data]. CEBU (Mactan I.).

Titanophora

Trono, 1973a:134, fig. 13. LUZON: Sorsogon.
Trono and Biña, 1973:7. MINDORO: Oriental Mindoro.
Trono, 1978:18. MARINDUQUE.
Trono and Ganzon-Fortes, 1980:73, fig. [s.n.]. LUZON: Batangas.
Saraya and Trono, 1982:37. LUZON: Pangasinan.

Tolyptocladia

Trono, 1972:107. SULU: Tawitawi.
Trono and De Lara, 1981:20. MINDORO: Occidental Mindoro (Lubang Is.).

Trichogloea

Cordero, 1978a:13. BATANES.

PHAEOPHYCEAE

Colpomenia

Cordero, 1984a:85. LUZON: Ilocos Norte.

Cutleria

Cordero, 1979b:284. PANAY: Aklan.

Cystoseira

Reyes, 1980:123, pl. 4: fig. 3. SIKUIJOR.

Dictyopteris

Meñez, 1961:64. LUZON: Pangasinan.

Dictyota

Meñez, 1961:63, pl. 11: fig. 121; pl. 12: fig. 132. LUZON: Pangasinan.

Villones and Magdamo, 1968:26, fig. 17. LUZON: Batangas.

Trono, 1974a:144. SULU: Sulu (Siasi I.).

Cordero, 1984a:83. LUZON: Ilocos Norte.

Cordero, 1984b:61. MASBATE.

**Ectocarpus*

Cornejo and Velasquez, 1972:176, pl. 2: figs. 12, 13. LUZON: Batangas.

Feldmannia

Cordero, 1979b:284. PANAY: Aklan.

Hydroclathrus

Villones and Magdamo, 1968:26, fig. 19. LUZON: Batangas.

Hormophysa

Reyes, 1972:147. NEGROS: Negros Oriental.

Padina

Meñez, 1961:62. LUZON: Pangasinan.

Villones and Magdamo, 1968:27, fig. 20. LUZON: Batangas.

Reyes, 1972:146. NEGROS: Negros Oriental.

Reyes, 1980:120, pl. 2: fig. 2. SIKUIJOR.

Cordero, 1984a:84. LUZON: Ilocos Norte.

**Punctaria*

Cordero, 1984a:84. LUZON: Ilocos Norte.

Sargassum

Meñez, 1961:64–67, pl. 9: figs 96–102. LUZON: Pangasinan.

de los Reyes, 1967:231, 233, fig. 6. LEYTE (Biliran I.).

Villones and Magdamo, 1968:27, fig. 21. LUZON: Batangas.

Reyes, 1972:146–147. NEGROS: Negros Oriental.

Cordero, 1973b:26. LEYTE (Biliran I.).

Trono, 1973d:13, pl. 8: fig. 31, 32.

Velasquez et al., 1973:22. LUZON: Bataan.

Trono, 1974a:148. SULU: Sulu (Siasi I.).

Trono and Young, 1977:58. CATANDUANES.

Trono, 1978:12–14. MARINDUQUE.

Trono and Tuason, 1978:12. CATANDUANES.

Vannajan and Trono, 1978:13, fig. 9. LUZON: Cavite.

Cordero, 1980b:36, fig. 3c, pls. 23, 24, [51]. LUZON: Cagayan, Ilocos Norte. SAMAR: Western Samar, Eastern Samar. PANAY: Aklan. SIKUIJOR. MINDANAO: Surigao del Sur.

Reyes, 1980:123, pl. 4: fig. 4. SIKUIJOR.

Trono and Ganzon-Fortes, 1980:51–53, [2] figs. LUZON: Batangas.

Guzman, 1981:43, 52.

Trono and De Lara, 1981:10, pl. VII: fig. 1. MINDORO: Occidental Mindoro (Lubang Is.).

Trono and Ang, 1982:15–16. PALAWAN (Bugsuk I.).

Hurtado-Ponce, 1983a:125–126. LUZON: Ilocos Norte.

Marcos-Anggarayngay, 1983b:14, fig. 11. LUZON: Ilocos Norte.

Cordero, 1984a:86. LUZON: Ilocos Norte.

Cordero, 1984b:63. PALAWAN.

Cordero, 1984c:54. MASBATE.

Spatoglossum

Trono, 1974a:145–146. SULU: Sulu (Siasi I.).

Reyes, 1980:121, pl. 2: fig. 4. SIKUIJOR.

Sphacelaria

Trono, 1973d:11. LUZON: Pangasinan.

Vannajan and Trono, 1978:8, fig. 2. LUZON: Cavite.

Turbinaria

Meñez, 1961:68. LUZON: Pangasinan.

Reyes, 1972:147. NEGROS: Negros Oriental.

Trono, 1972:101. SULU: Tawitawi.

Trono, 1973d:12. SAMAR: Eastern Samar.

CHLOROPHYCEAE

Acetabularia

Domantay, 1962:277. LUZON: Pangasinan.

Anadyomene

Cordero, 1984a:74. LUZON: Ilocos Norte.

Boergesenia

Trono, 1973b:217. SULU: Sulu (Siasi I.).

Boodlea

Villones and Magdamo, 1968:26, fig. 14. LUZON: Batangas.

Trono, 1973c:6. MINDORO: Oriental Mindoro.

Trono, 1973d:4. SULU: Tawitawi.

Bryopsis

Reyes, 1972:142. NEGROS: Negros Oriental.

Caulerpa

Trono, 1973a:128. LUZON: Sorsogon.

Trono, 1973b:220. SULU: Sulu (Siasi I.).

Trono, 1973d:8, pl. 2: fig. 6. SIKUIJOR.

Cordero, 1976a:86, fig. 2. CEBU (Mactan I.).

Cordero, 1977b:26, 28, fig. 3 [*Caulerpa brachypus*? "false-type"]. SIKUIJOR.

Cordero, 1984a:78. LUZON: Ilocos Norte.

Chaetomorpha

G. Blanco, 1938:512. LUZON: Cagayan (incl. Babuyan Is.).

Villones and Magdamo, 1968:24, fig. 10 [cited but not published]. LUZON: Batangas.

Reyes, 1972:140. NEGROS: Negros Oriental.

Trono, 1973b:214. SULU: Sulu (Siasi I.).

Reyes, 1978:149. SIKUIJOR.

**Cladocephalus*

Taylor, 1966b:352. PALAWAN (Balabac I.).

Cladophora

Cornejo and Velasquez, 1972:174, pl. 1: fig. 8. LUZON: Batangas.

Trono, 1972:94. SULU: Tawitawi.

Trono, 1973b:214. SULU: Sulu (Siasi I.).

Trono, 1973d:4. SIKUIJOR.

Trono, 1975:29. LUZON: Sorsogon.

Cordero, 1977b:22. BATANES.

Vannajan and Trono, 1977:43, fig. 17. LUZON: Rizal, Manila.

Reyes, 1978:147–148, pl. 4: figs. 3–7. SIKUIJOR.

Cladophoropsis

Trono, 1973d:4, pl. 1: fig. 4. MINDANAO: Zamboanga.

Cordero, 1984a:73 [as *Spongocladia*]. LUZON: Ilocos Norte.

Codium

Galutira and Velasquez, 1964:498, pl. 2: fig. 6; pl. 7: fig. 24. LUZON: Ilocos Norte.

de los Reyes, 1967:231, 233, fig. 1. LEYTE (Biliran I.).

Trono, 1973b:223–225. SULU: Sulu (Siasi I.).

Trono, 1973c:14, fig. 6.

Trono, 1973d:9. MINDANAO: Zamboanga.

Reyes, 1978:158, pl. 10: figs. 1, 2. SIKUIJOR.

Cordero, 1979b:282. PANAY: Aklan.

Cordero, 1984a:79. LUZON: Ilocos Norte.

Dasycladus

- Cordero, 1979b:282. PANAY: Aklan. [Specimen in UC determined as *Chlorocladus australasicus* by I.R. Price, 27.i.1982.]

Dictyosphaeria

- Reyes, 1978:152, pl. 6: figs. 11, 12. SIKUIJOR.

Enteromorpha

- Trono, 1972:94. SULU: Tawitawi.
 Trono, 1973c:4. MINDORO: Oriental Mindoro.
 Trono, 1975:25. LUZON: Sorsogon.
 Reyes, 1978:146. SIKUIJOR.
 Saraya and Trono, 1980:8. LUZON: Pangasinan.
 Guzman, 1981:42, 47, 51.
 Cordero, 1984a:70. LUZON: Ilocos Norte.

Halimeda

- Trono, 1973b:227-228. SULU: Sulu (Siasi I.).
 Trono, 1973d:9. MINDANAO: Zamboanga.
 Trono, 1975:39-40. LUZON: Sorsogon.

- Trono and Young, 1977:57. CATANDUANES.

- Cordero, 1984a:81. LUZON: Ilocos Norte.

Microdictyon

- Trono, 1973b:215. SULU: Sulu (Siasi I.).
 Cordero, 1984a:74. LUZON: Ilocos Norte.

Monostroma

- Reyes, 1972:138. NEGROS: Negros Oriental.
 Reyes, 1978:146, pl. 3: fig. 6. SIKUIJOR.

**Spongomorpha*

- Liao and Sotto, 1980:96 [no description or collecting data]. CEBU (Mactan I.).

**Trichosolen*

- Gilbert and Doty, 1969:122, fig. 5. LUZON: Rizal. CATANDUANES. CEBU.

Ulva

- Trono, 1975:28. LUZON: Sorsogon.
 Reyes, 1978:147, pl. 3: fig. 10. SIKUIJOR.
 Cordero, 1984a:71. LUZON: Ilocos Norte.

Nomenclatural Notes

by Paul C. Silva

Later Starting Points in CYANOPHYCEAE

The International Code of Botanical Nomenclature (ICBN; Voss et al., 1983) states that nomenclature for the Nostocales begins with the monographs of Bornet and Flahault (1886–1888) and Gomont (1892–1893). (The ICBN assigns an arbitrary date of 1886 and 1892, respectively, to these monographs.) An enormous body of taxonomic information about blue-green algae had been published before those distinguished French phycologists wrote their monographs. According to the ICBN, pre-starting point taxonomy may be retained, but pre-starting point nomenclature does not exist. This legalistic nonsense, rather than simplify the nomenclature of blue-green algae, has introduced hopeless confusion. Even those (like Drouet) who profess to follow the ICBN with regard to later starting points are inconsistent. Names treated as synonyms in the starting point monographs are invalid according to the ICBN, but Drouet (1968:14) pointed out that all such names presumably have been validated subsequently "by reference or by a new description." Lacking the time to "search through thousands of local floras, check-lists of species, and morphological, ecological, and physiological papers", Drouet treated those older names "as having been validly and autonomously published, not as synonyms, but by reference to their original descriptions" in the starting point monograph and subsequent publications.

In view of the facts that Drouet has located the types of the majority of blue-green algal species and that blue-green algal taxonomy is in an extraordinary state of flux, it seems pointless to attempt to accommodate their nomenclature to later starting points. *Oscillatoria submembranacea* is an example of the needless complications caused by the use of later starting points. This species was first described by Ardissonne and Strafforello (1877) as *Oscillaria submembranacea*. In Gomont (1892), the starting point monograph for *Oscillatoria*, it was treated as *Phormidium submembranaceum*. In accordance with normal nomenclature, this name would be written *Phormidium submembranaceum* (Ardissonne and Strafforello) Gomont, but Article 13.1 of the ICBN renders pre-starting point nomenclature invalid, so that the name must be ascribed solely to Gomont and dated from 1892, not 1877. Drouet (1968:203) transferred the species to *Oscillatoria*, but incorrectly attributed it directly to Ardissonne and Strafforello (considering *Oscillaria* and *Oscillatoria* as orthographic variants, an equivocal interpretation). In accordance with later starting points, it should be written *Oscillatoria submembranacea* (Gomont) Drouet!

In the long course of compiling the Index Nominum Algarum (since 1948), I repeatedly struggled with the complications of later starting points and eventually concluded that it was impractical to continue to do so. The present catalog is my first opportunity to make the iconoclastic move of basing the nomenclature of blue-green algae uniformly on the Linnaean starting date, 1753.

The Taxonomy of Acrochaetioid Algae

The confused taxonomy of acrochaetioid algae was thoroughly reviewed by Woelkerling (1983a), who expressed personal preference for either of two classifications: a monogeneric scheme using the oldest available name, *Audouinella* Bory de Saint-Vincent (1823:340, "*Audouinella*"); or a polygeneric scheme based solely on the type of life history without regard for vegetative features. Woelkerling concluded: "In the short term, it seems to me that it is more important to accumulate detailed, trustworthy data on numerous species than to engage in endless manipulation of generic schemes. Use of either of the above two schemes would provide a workable taxonomic framework while new studies are being carried out."

The decision as to which classification would best serve the purposes of this catalog was based on the following considerations. Papenfuss (1945), in trying to delineate the South African acrochaetioid algae, concluded that it was possible to distribute them among four genera on the basis of the number and form of the chloroplasts in each vegetative cell, as follows:

Rhodochorton, few to many small, discoid chloroplasts;
Acrochaetium, one parietal or laminate chloroplast;
Audouinella, one or more spiral chloroplasts; and
Chromastrum, one or more stellate chloroplasts.

It soon became apparent that the distinction drawn by Papenfuss between *Acrochaetium* and *Chromastrum* was difficult to maintain, partly because he (and many subsequent workers) confused form with position. A chloroplast with a stellate form may be axile or parietal in position. There are intermediate situations with regard to both form and position. Feldmann (1962) proposed that *Acrochaetium* include plants whose cells contain a single chloroplast of either form or position. Woelkerling (1971), believing that vegetative characters are of diagnostic value only at the species level, placed all acrochaetioid algae with sexual stages in one genus, *Audouinella*. He referred those without sexual stages to *Colaconema* Batters (1896:8), which he treated as a form

genus. *Chromastrum* was re-established by Stegenga and Mulder (1979) to include species with one axile, stellate, pyrenoid-bearing chloroplast in each cell and a life history involving an alternation of heteromorphic phases—the gametophyte with a unicellular base and the tetrasporophyte with a multicellular base that develops from a septately germinating carpospore. *Acrochaetium* was circumscribed to include species with one to several parietal pyrenoid-bearing chloroplasts in each cell and a life history involving an alternation of isomorphic phases. *Audouinella* was retained for species with one to several parietal chloroplasts of spiral or irregular shape, without pyrenoids.

The nomenclature of acrochaetioid algae was muddled long ago by the selection of *Acrochaetium daviesii* (Dillwyn) Nägeli (1862:405, 412), based on *Conferva daviesii* Dillwyn (1809 [1802–1809]:73, pl. f), as the lectotype of its genus by Drew (1928:147), who erroneously believed (along with all other authors) that the genus was first described by Nägeli in 1862. In fact, it was described in 1858, and *A. daviesii* was not among the original species. Accordingly, Woelkerling (1983a:65) set aside the lectotype that, although untenable, had been accepted for more than a half-century, replacing it with *A. secundatum* (Lyngbye) Nägeli (1858:532, footnote), based on *Callithamnion daviesii* (Dillwyn) Lyngbye var. *secundatum* Lyngbye (1819:129, pl. 41B: figs. 4–6). Although in both species each cell contains a single chloroplast with a pyrenoid, in *A. daviesii* the chloroplast is laminate and parietal, while in *A. secundatum* it is stellate and axile. Those schemes that are based on vegetative features, either wholly or partly, are thus severely affected. *Chromastrum* falls into synonymy under *Acrochaetium*, while some name other than *Acrochaetium* must be applied to those species considered by many workers through many decades to be congeneric with *A. daviesii*. Stegenga (1985) applied *Colaconema* to the latter circumscription. The coining of numerous binomials as a consequence of changing the lectotype of *Acrochaetium* could be precluded by the conservation of that generic name using the 1862 publication as protologue and *A. daviesii* as type. Any proposal for conservation, however, should await further clarification of the taxonomy of acrochaetioid algae.

Because any classification of acrochaetioid algae used at present either would be admittedly artificial (based on a single character) or, if allegedly natural (based on morphological, ontogenetic, and life history characters), would be criticized as being premature, I have employed a scheme that at least has the merit of not requiring new binomials, namely that of Feldmann (1962). According to this classification, all records of acrochaetioid algae for the Philippines are encompassed by *Acrochaetium*.

Galaxauraceae as a Replacement for Chaetangiaceae

When *Chaetangium* was established, Kützinger (1843b:392) misidentified his material with *Fucus ornatus* Linnaeus,

which has turned out to be representative of *Suhria* in the Gelidiaceae (see Papenfuss, 1952:173). For many decades the name *Chaetangium* has been applied on the basis of Kützinger's material, but a decision made at the International Botanical Congress at Sydney in 1981 makes it clear that the name must remain with *Suhria* unless conservation is invoked.

Parkinson (1983), after reviewing the nomenclatural history of *Chaetangium*, decided against conservation of that generic name, choosing instead to propose *Suhria* for conservation against *Chaetangium* and to resurrect *Nothogenia* Montagne (1843a:302) as a replacement for *Chaetangium*. [*Nothogenia variolosa* (Montagne) Montagne, the type of its genus, was placed in the synonymy of *Chaetangium fastigiatum* (Bory de Saint-Vincent) J. Agardh by Kylin (in Kylin and Skottsberg, 1919:6)]. Because the name Chaetangiaceae must be considered a synonym of Gelidiaceae, Parkinson simultaneously established the family Galaxauraceae.

Portieria as a Replacement for Chondrococcus

The genus of Rhizophyllidaceae currently called *Desmia* Lyngbye (1819) emend. J. Agardh (1852 [1851–1863]) or *Chondrococcus* Kützinger (1847) has a troubled nomenclatural history. I have discussed it in detail previously (Silva, 1952a:304–306), but it is necessary to return to it in light of changes in the ICBN made at Sydney pertaining to the typification of generic names.

Desmia was established by Lyngbye (1819:xxix, 33) to receive three species with narrow, compressed branches. One species is the type of *Herbacea* Stackhouse (1809) and another is the type of *Hippurina* Stackhouse (1809). Both of these genera are referable to *Desmarestia* Lamouroux (1813), but the name *Desmarestia* has been conserved against the Stackhouse names. *Desmia* is thus a superfluous name for *Desmarestia* and illegitimate in accordance with Article 63.1 of the ICBN. Although Lyngbye did not give a reason for abandoning the name *Desmarestia*, which he cited in synonymy, he may have considered *Desmia* a better name because of its brevity or because it was descriptive (derived from the Greek word *desmos*, “band”) rather than commemorative (*Desmarestia* being named for Anselm Gaëtan Desmarest, a French zoologist). The sharing of the first four letters by the two names perhaps is not purely coincidental.

The third species assigned by Lyngbye to *Desmia* was *D. hornemannii* (“*hornemanni*”), based on a specimen sent to him by Mertens under the name *Fucus hornemanni*. Mertens found this specimen among Forsskål's collections and indicated that it came from Helsingør on the Øresund (strait between Denmark and Sweden), but the provenance probably was the Red Sea (see Rosenvinge, 1931:617). Lyngbye cited *Fucus hornemanni* as being published by Mertens in the Göttingische gelehrte Anzeigen for 1815, but at that place (page 633) it was a nomen nudum (see Papenfuss, 1940:216). Valid nomenclature for this species thus begins

with *Desmia hornemannii* as described and illustrated by Lyngbye (1819:35, pl. 7:c). Subsequent to 1819 and prior to 1852, the name *Desmia* was applied either to a genus closely related to *Desmarestia* or to a section or subgenus of that genus.

J. Agardh (1852 [1851–1863]:639) emended the genus *Desmia*, retaining only *D. hornemannii* of Lyngbye's original species and adding two other species, *D. ambigua* J. Agardh from India and *D. tripinnata* (Hering) J. Agardh (*Rhodymenia tripinnata* Hering) from South Africa. He accredited the emended genus to himself and placed it (with a query) in the tribus Sphaerococcoideae of the ordo Sphaerococcoideae (a broadly defined group not equivalent taxonomically to the modern Sphaerococcaceae).

Meanwhile, Kützing (1847a:23) had established the genus *Chondrococcus* on the basis of *Fucus abscissus* Turner (1819 [1815–1819]:65, pl. 223) from New Zealand and *F. lambertii* Turner (1819 [1815–1810]:96, pl. 237) from Australia. The first species is currently placed in *Melanthalia* Montagne (1843) in the Gracilariaceae, while the second species, as defined by the type collection, is referable to *Callophyllis* Kützing (1843) in the Kallymeniaceae. Kützing applied the name *Chondrococcus lambertii* to a mixture of species, citing both Australian and South African specimens, the former being representative of *Callophyllis*, the latter of *Chondrococcus* as currently defined. At the time that I wrote my account of the nomenclatural history of *Chondrococcus*, typification of generic names was not legislated unequivocally by the ICBN, and the contemporary consensus was that in the event an author based a generic description on one entity but erroneously assigned it to a different entity, the generic name should apply to the material at hand. In the case of *Chondrococcus*, Kützing based the generic description on South African material, so that in 1952 I concluded that the correct name for the genus was *Chondrococcus*. At Sydney in 1981, however, the ICBN was changed to specify that the type of a generic name must be a cited species. Thus, the type of *Chondrococcus* is either *Fucus abscissus* or *F. lambertii*, making the generic name a later taxonomic synonym of *Melanthalia* Montagne (1843) or *Callophyllis* Kützing (1843).

J. Agardh (1852 [1851–1863]:639) cited *Chondrococcus* as a synonym of his emended *Desmia*, and during the period 1852–1895 only Kützing used that name. Schmitz (1895:168–172) reviewed the genus and adopted the name *Chondrococcus* in preference to *Desmia*. Most subsequent authors have followed Schmitz in this regard.

Portieria Zanardini (1851:33) appears to be the only available synonym. This genus was established to receive a single species, *P. coccinea*, based on material obtained in the Red Sea by Portier, a poorly known French collector (see Zanardini, 1858:210). This species was placed in the synonymy of *Chondrococcus hornemannii* by Schmitz (1895:170). The status of *Portieria* as the first generic name unequivocally applied to the rhizophyllidaceous genus under considera-

tion supports the adoption of this name in preference to manipulating the conservation of either *Desmia* or *Chondrococcus*.

The genus *Portieria* includes the following species.

- Portieria? dichotoma* (Hauck) P.C. Silva, new combination (*Desmia dichotoma* Hauck, 1886 [1886–1887]:218, fig. [s.n.]).
- P. harveyi* (J. Agardh) P.C. Silva, new combination (*Desmia harveyi* J. Agardh, 1876:356).
- P. hornemannii* (Lyngbye) P.C. Silva, new combination (*Desmia hornemannii* Lyngbye, 1819:35, pl. 7:c).
- P. japonica* (Harvey) P.C. Silva, new combination (*Desmia japonica* Harvey, 1860a:331).
- P. kilneri* (J. Agardh) P.C. Silva, new combination (*Desmia kilneri* J. Agardh, 1876:355).
- P. spinulosa* (Kützing) P.C. Silva, new combination (*Chondrococcus spinulosus* Kützing, 1868:11, pl. 32: figs. a–c).

It may be noted that Papenfuss (1940:218) recognized *Desmia tripinnata* as a separate species, but D. Reid Wiseman, in a recent study of material in the Herbarium of the University of California at Berkeley, retained it within the circumscription of *Chondrococcus hornemannii*.

Eupogodon as a Replacement for *Dasyopsis*

The genus *Dasyopsis* is always attributed to Zanardini (1843:52). In the place cited, however, there is no description. Zanardini merely stated that he was persuaded to segregate *Dasya plana* C. Agardh and *D. spinella* C. Agardh into their own genus by the position, form, and disposition of the stichidia, without giving the stichidial characters.

Montagne (1844b:611) prepared a special article on *Dasyopsis* for d'Orbigny's Dictionnaire Universelle d'Histoire Naturelle, but without giving a description. In his *Flore d'Algérie*, Montagne (1846b:85) reduced *Dasyopsis* to a subgenus of *Dasya* and validated the name at subgeneric rank by providing a diagnosis. The following year, Montagne (1847:54) recognized *Dasyopsis* as a genus.

Meanwhile, Kützing (1845:312), arriving independently at the taxonomic conclusion that *Dasya plana* should be segregated from *Dasya*, established the genus *Eupogodon*. He later (Kützing, 1849:801) added *Dasya spinella* and *D. cervicornis* J. Agardh to the genus. Kützing provided a diagnosis in his original publication of *Eupogodon*, and thus this name takes priority over *Dašyopsis* (Montagne) Montagne. Kützing originally treated *Eupogodon* ("true beard-tooth") as a neuter name, but in fact it is masculine, as he himself recognized in subsequent publications.

The genus *Eupogodon* includes the following species.

- Eupogodon anastomosans* (Weber-van Bosse) P.C. Silva, new combination (*Dasyopsis anastomosans* Weber-van Bosse, 1921:309, pl. VII: fig. X).
- E. antillarum* (Howe) P.C. Silva, new combination (*Dasyopsis antillarum* Howe, 1920:577).
- E. apertus* (Weber-van Bosse) P.C. Silva, new combination (*Dasyopsis aperta* Weber-van Bosse, 1913b:128, pl. 13: fig. 17; pl. 14: fig. 32).
- E. apiculatus* (C. Agardh) P.C. Silva, new combination (*Bonnemaisionia apiculata* C. Agardh, 1835: no. xxxix, pl. 39).

- E. cervicornis* (J. Agardh) Kützing, 1849:802.
E. geppii (Weber-van Bosse) P.C. Silva, new combination (*Dasyopsis geppii* Weber-van Bosse, 1913b:130, pl. 13: figs. 18–20; pl. 14: fig. 33).
E. palmatifidus (Weber-van Bosse) P.C. Silva, new combination (*Dasyopsis palmatifida* Weber-van Bosse, 1913b:130, pl. 13: fig. 21).
E. penicillatus (Zanardini) P.C. Silva, new combination (*Dasya penicillata* Zanardini, 1865:379, pl. XIV [XLI]).
E. pilosus (Weber-van Bosse) P.C. Silva, new combination (*Dasyopsis pilosa* Weber-van Bosse, 1923:377, fig. 137).
E. pinnatifolius (Suhr) P.C. Silva, new combination (*Ptilota ? pinnatifolia* Suhr, 1834:732, pl. II: figs. 18 and *t*).
E. planus (C. Agardh) Kützing, 1845:312.
E. pulchellus (Weber-van Bosse) P.C. Silva, new combination (*Dasyopsis pulchella* Weber-van Bosse, 1921:309, pl. VII: fig. VII).
E. spinellus (C. Agardh) Kützing, 1849:801.
E. stanleyi (Weber-van Bosse) P.C. Silva, new combination (*Dasyopsis stanleyi* Weber-van Bosse, 1913b:128, pl. 13: fig. 16).
E. tenellus (Weber-van Bosse) P.C. Silva, new combination (*Dasyopsis tenella* Weber-van Bosse, 1921:309, pl. VII: fig. VI).

Hincksia as a Replacement for *Giffordia*

While John Edward Gray was Keeper of the Zoology Department of the British Museum, he prepared a catalog "merely to enable Mrs. Gray to arrange her collection of British Algae according to the most recent methods." In this scholarly but generally overlooked work, Gray (1864) defined some common filamentous genera more narrowly than was customary at that time, creating new genera among blue-green, red, brown, and green algae. One of the genera segregated from *Ectocarpus* was *Hincksia*, to which Gray assigned a single species, *H. ramulosa*, based on *Ectocarpus hincksiae* Harvey (1841:40). This species was transferred to *Giffordia* Batters (1893:86) by Hamel (1939:xv). Gray (1864:12) characterized *Hincksia* as follows: "Frond secundly branched; fruit conical, sessile, produced along the inner face of the branches and ramuli, one arising from almost every joint, giving the branch a serrated appearance." Although this diagnosis lacks two essential generic characters (discoïd plastids and lack or irregular occurrence of meristematic regions), it is clear that Gray had a species of *Giffordia* in hand and that *Hincksia* should supersede *Giffordia*. Both generic names commemorate female British phycologists, Hannah Hincks (1798–1871) of Belfast and Isabella Gifford (1823?–1891) of Minehead, Somerset, respectively.

The genus *Hincksia* includes the following species.

- Hincksia andamanensis* (Krishnamurthy and Baluswami) P.C. Silva, new combination (*Giffordia andamanensis* Krishnamurthy and Baluswami, 1982:104, figs. 1–11; 1983:47).
H. bhimlipatnamensis (Krishnamurthy and Baluswami) P.C. Silva, new combination (*Giffordia bhimlipatnamensis* Krishnamurthy and Baluswami, 1982:105, figs. 12–15; 1983:47).
H. clavata (Krishnamurthy and Baluswami) P.C. Silva, new combination (*Giffordia clavata* Krishnamurthy and Baluswami, 1982:106, figs. 23–28; 1983:48).
H. fenestrata (Berkeley ex Harvey) P.C. Silva, new combination (*Ectocarpus fenestratus* Berkeley ex Harvey, 1849 [1847–1851]: pl. CCLVII; 1849:58).

- H. fuscata* (Zanardini) P.C. Silva, new combination (*Ectocarpus fuscatus* Zanardini in Meneghini, 1846:381).
H. ghardaqaensis (Nasr) P.C. Silva, new combination (*Ectocarpus ghardaqaensis* Nasr, 1939:59, figs. 8, 9).
H. granulosa (J.E. Smith) P.C. Silva, new combination (*Conserva granulosa* J.E. Smith, 1811 [1811–1812]: pl. 2351).
H. hincksiae (Harvey) P.C. Silva, new combination (*Ectocarpus hincksiae* Harvey, 1841:40).
H. hincksiae var. *californica* (Hollenberg and Abbott) P.C. Silva, new combination (*Giffordia hincksiae* var. *californica* Hollenberg and Abbott, 1968:1238, fig. 3).
H. intermedia (Rosenvinge) P.C. Silva, new combination (*Ectocarpus ovatus* var. *intermedius* Rosenvinge in Rosenvinge and S. Lund, 1941:49, figs. 21, 22).
H. mitchelliae (Harvey) P.C. Silva, new combination (*Ectocarpus mitchelliae* Harvey, 1852:142, pl. XII:c, "mitchelliae").
H. mitchelliae var. *neilii* (Krishnamurthy and Baluswami) P.C. Silva, new combination (*Giffordia mitchelliae* var. *neilii* Krishnamurthy and Baluswami, 1982:106, figs. 16–22; 1983:47).
H. onslowensis (Amsler and Kapraun) P.C. Silva, new combination (*Giffordia onslowensis* Amsler and Kapraun, 1985:94, figs. 1–3).
H. ovata (Kjellman) P.C. Silva, new combination (*Ectocarpus ovatus* Kjellman, 1877:35).
H. prolifera (Krishnamurthy and Baluswami) P.C. Silva, new combination (*Giffordia prolifera* Krishnamurthy and Baluswami, 1982:107, figs. 29–41; 1983:48).
H. rallsiae (Vickers) P.C. Silva, new combination (*Ectocarpus rallsiae* Vickers, 1905:59).
H. sandriana (Zanardini) P.C. Silva, new combination (*Ectocarpus sandrianus* Zanardini, 1843:41).
H. saundersii (Setchell and Gardner) P.C. Silva, new combination (*Ectocarpus saundersii* Setchell and Gardner, 1922:411).
H. secunda (Kützing) P.C. Silva, new combination (*Ectocarpus secundus* Kützing, 1847a:54).
H. sordida (Harvey) P.C. Silva, new combination (*Ectocarpus sordidus* Harvey, 1860c:294).
H. terminalis (Krishnamurthy and Baluswami) P.C. Silva, new combination (*Giffordia terminalis* Krishnamurthy and Baluswami, 1982:108, figs. 46–57; 1983:48).
H. thyrsoides (Børgesen) P.C. Silva, new combination (*Ectocarpus thyrsoides* Børgesen, 1937:12, figs. 6, 7).

The Correct Name for *Hormophysa triquetra*

The nomenclature of this species was investigated by Papenfuss (1968), who, after considering several synonyms, concluded that the correct name was *Hormophysa triquetra* (C. Agardh) Kützing. As will be shown, this name must be superseded.

When uncritically compiling the hitherto described species of *Fucus*, J.F. Gmelin (1792) confronted two pairs of homonyms, both now believed to involve *Hormophysa triquetra*. One pair was *Fucus triqueter* S.G. Gmelin (1768:122, pl. VIII: fig. 4) and *F. triqueter* Linnaeus (1771:312). Swartz (1788:148) had previously attempted to rectify the homonymy, but erred in proposing a substitute name, *Fucus trifarius*, for the senior homonym rather than the junior homonym. The first species is now known as *Bryothamnion triquetrum* (S.G. Gmelin) Howe (1915:222), a rhodomelaceous red alga from the Caribbean. *Fucus triqueter* Linnaeus was the first description of a species of *Hormophysa*. J.F.

Gmelin (1792:1382, 1383) erred in the same manner as Swartz, retaining the junior homonym and substituting the name *Fucus triangularis* for the Caribbean alga (which was called *Bryothamnion triangulare* until Howe pointed out the illegitimacy of that name). On transferring *F. triqueter* Linnaeus to *Cystoseira*, C. Agardh (1820b:61) provided a binomial (*C. triquetra*) that may be treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN.

The second pair of homonyms was *Fucus articulatus* S.G. Gmelin (1768:77) and *F. articulatus* Forsskål (1775:191). The first species was described, but not illustrated (the reference to pl. II: fig. 1, apparently being erroneous, judging from the legend and a comparison of the cited figure with the description). The provenance was said to be "Oceanus Indicus." In the absence of a type specimen, a definitive identification is not possible. The Forsskål species was united with *F. triqueter* Linnaeus in the genus *Cystoseira* by C. Agardh (1820b: 61), and subsequent authors have considered the two species as congeneric, but not always conspecific. J. Agardh (1848:215–216) recognized separate species, and on transferring *F. articulatus* Forsskål to *Cystoseira*, provided a binomial (*C. articulata*) that may be treated as a nomen novum in accordance with Article 72, Note 1, of the ICBN. On the basis of priority or perhaps purely by chance, J.F. Gmelin (1792:1381, 1389) retained the senior homonym and substituted the name *Fucus cuneiformis* for *F. articulatus* Forsskål. By an examination of Forsskål's

collection at Copenhagen (C), Børgesen (1932:11) confirmed that *Fucus articulatus* Forsskål is referable to *Hormophysa*. Hence, *Fucus cuneiformis* is the earliest legitimate name for this species and its correct name is *Hormophysa cuneiformis* (J.F. Gmelin) P.C. Silva, new combination.

Validation of the Green Algal Order Ctenocladales

The order Ctenocladales was proposed by Silva (1982:147) to accommodate those green algae previously placed in the Chaetophoraceae with ulvophycean rather than chlorophycean ultrastructure. The nature of the publication (an encyclopedia) precluded the provision of a Latin diagnosis essential to the validity of the name. Validation is effected herewith: Chlorophytae (algae virides) filamenta uniseriata ramosa aut sarcinas cellularum constantes; thallus erectus aut prostratus aut heterotrichus, filamentis prostratis libris aut cohaerentibus; cellulae omnes nucleum unum et chloroplastum singulum parietalem laminatam plerumque pyrenoidibus thylakoidiperductis (uno aut aliquot) continentes; cellulae motiles squamatae aut nudaе cum uno aut multis flagellis; flagella apicaliter affixa, symmetrica radialiter, cum systemate radicum microtubulare cruciato, radicibus rotationem contra horologii habentibus; cytokinesis per sulco cum phycoplasto nihil consociato effectus.

Familia typificata: Ctenocladaceae (Borzi) Borzi (1892:48, "Ctenocladiaceae").

Literature Cited

(References preceded by an asterisk (*) deal wholly with Philippine benthic marine algae or their collectors, or include Philippine records.)

- Abagon, M.A., D.M. Buñag, and A.M. De Vera
 *1951. "Gulaman dagat" as Supplementary Feed for Baños. *Bulletin of the Fisheries Society of the Philippines*, 2:41-49, 2 figures.
- Abbott, I.A.
 *1962. Some *Liagora*-inhabiting Species of *Acrochaetium*. *Occasional Papers of the Bernice P. Bishop Museum*, 23:77-120, 17 figures.
 *1970. *Yamadaella*, a New Genus in the Nemaliales (Rhodophyta). *Phycologia*, 9:115-123, 9 figures.
 1972. Taxonomic and Nomenclatural Notes on North Pacific Marine Algae. *Phycologia*, 11:259-265, 7 figures.
 1979. Some Tropical Species Related to *Antithamnion* (Rhodophyta, Ceramiales). *Phycologia*, 18:213-227, 31 figures.
 1983. Some Species of *Gracilaria* (Rhodophyta) from California. *Taxon*, 32:561-564, 4 figures.
 1984. Two New Species of *Liagora* (Nemaliales, Rhodophyta) and Notes on *Liagora farinosa* Lamouroux. *American Journal of Botany*, 71:1015-1022, 25 figures.
 *1985. *Gracilaria* from the Philippines: List and Distribution of the Species. In I.A. Abbott and J.N. Norris, editors, *Taxonomy of Economic Seaweeds with Reference to Some Pacific and Caribbean Species*, pages 89-90, various figures on pages 102-113. [California Sea Grant College Program Report, T-CSGCP-011.]
- Abelardo, L.C., and A.I. De Leon
 *1956. Determination of the Moisture, Nitrogen and Iodine Content of Some Philippine Algae. *Journal of the Philippine Pharmaceutical Association*, 43:102. [Abstract.]
- Adey, W.H.
 1970. A Revision of the Fossil Crustose Coralline Herbarium. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1970(1): 46 pages, 13 figures.
- Adey, W.H., and P.A. Lebednik
 1967. *Catalog of the Fossil Herbarium, Det Kongelige Norske Videnskabers Selskab Museet, Trondheim, Norway*. 91 pages. [Privately published, without place of publication; cover has "Norve" rather than "Norway."]]
- Adey, W.H., and D.L. McKibbin
 1970. Studies on the Maerl Species *Phymatolithon calcareum* (Pallas) nov. comb. and *Lithothamnium coralloides* Crouan in the Ria de Vigo. *Botanica Marina*, 13:100-106, 16 figures.
- Adey, W.H., R.A. Townsend, and W.T. Boykins
 1982. The Crustose Coralline Algae (Rhodophyta: Corallinales) of the Hawaiian Islands. *Smithsonian Contributions to the Marine Sciences*, 15: iv + 74 pages, 47 figures.
- Agardh, C.A.
 1810-1812. *Dispositio algarum Sueciae*. 45 pages. Lunda [Lund]. [1810 = pages 1-16; 1811 = 17-26; 1812 = 27-45.]
 1815. *Algarum decas quarta*. Pages 41-56, plates 2, 3. Lunda [Lund].
 1817. *Synopsis algarum Scandinaviae*. XL + 135 pages. Lunda [Lund].
 1820a. *Icones algarum ineditae*. Fascicle 1: [4] pages, X plates. Lunda [Lund].
 1820b. *Species algarum*. Volume 1, part 1, pages 1-168. Lunda [Lund].
 1822a. *Species algarum*. Volume 1, part 2, pages [i-viii] + 169-531. Lunda [Lund]. [Pages 399-531 probably published in 1823.]
 1822b. Algae, Agardh. In C.S. Kunth, *Synopsis plantarum, quas, in itinere ad plagam aequinoctialem orbis novi, collegerunt Al. de Humboldt et Am. Bonpland*, volume 1, pages 1-6. Parisii [Paris].
 1824. *Systema algarum*. xxxviii + 312 pages. Lunda [Lund].
 1827. Aufzählung einiger in den österreichischen Ländern gefundenen neuen Gattungen und Arten von Algen, nebst ihrer Diagnostik und beigefügten Bemerkungen. *Flora*, 10:625-646.
 1828. *Species algarum*. Volume 2, section 1, lxxvi + 189 pages. Gryphia [Greifswald].
 1835. *Icones algarum europaeorum*. Fascicle 4, numbers XXXI-XL, plates 31-40. Leipsic [Leipzig].
- Agardh, J.G.
 1837. *Novae species algarum, quas in itinere ad oras maris Rubri collegit Eduardus Rüppell; cum observationibus nonnullis in species rariores antea cognitae*. *Museum Senckenbergianum*, 2:169-174.
 1841. In historiam algarum symbolae. *Linnaea*, 15:1-50, 443-457.
 1842. *Algae maris Mediterranei et Adriatici*. x + 164 pages. Parisii [Paris].
 1847. Nya alger från Mexico. *Öfversigt af Kongl. [Svenska] Vetenskaps-Akademiens Förhandlingar*, 4:5-17.
 *1848. *Species genera et ordines algarum. Volumen primum: algas fucoideas complectens*. viii + 363 pages. Lunda [Lund].
 *1851-1863. *Species genera et ordines algarum. Volumen secundum: algas florideas complectens*. 1291 pages. Lunda [Lund]. [1851 = part 1, pages i-xii + 1-351; 1852 = part 2, pages 337[bis]-351 [bis], 352-720; part 3, pages 701[bis]-720[bis], 721-786; 1863 = part 3, pages 787-1291 (1139-1158 omitted).]
 1870. Om Chatham-öarnes Alger. *Öfversigt af Kongl. [Svenska] Vetenskaps-Akademiens Förhandlingar*, 27:435-456.
 1872. Bidrag till Florideernes systematik. *Lunds Universitets Årsskrift. Afdelningen för Matematik och Naturvetenskap*, 8(6): 60 pages.
 1873. Till algerne systematik, Nya bidrag. *Lunds Universitets Årsskrift, Afdelningen för Matematik och Naturvetenskap*, 9(8): 71 pages.
 *1876. *Species genera et ordines algarum, Volumen tertium: de florideis curae posteriores*. vii + 724 pages. Lipsia [Leipzig].
 1882. Till algerne systematik, Nya bidrag (Andra afdelningen). *Lunds Universitets Årsskrift, Afdelningen för Matematik och Naturvetenskap*, 17(4): 134 pages, III plates.
 1883. Till algerne systematik, Nya bidrag (Tredje afdelningen). *Lunds Universitets Årsskrift, Afdelningen för Matematik och Naturvetenskap*, 19(2): 177 pages, IV plates.
 1885. Till algerne systematik, Nya bidrag (Fjerde afdelningen). *Lunds Universitets Årsskrift, Afdelningen för Matematik och Naturvetenskap*, 21(8): 117 pages, I plate.
 1887. Till algerne systematik, Nya bidrag (Femte afdelningen). *Lunds Universitets Årsskrift, Afdelningen för Matematik och Naturvetenskap*, 23(2): 174 pages, V plates.
 1889. Species Sargassorum Australiae descriptae et dispositae. *Kongliga Svenska Vetenskapsakademiens Handlingar*, [series 4], 23(3): 133 pages, XXXI plates.
 1892. *Analecta algologica*. *Lunds Universitets Årsskrift, Andra Afdelningen, Kongliga Fysiografiska Sällskapets Handlingar*, 28(6): 182 pages, III plates.

1894. *Analecta algologica, Continuatio I. Lunds Universitets Årsskrift, Andra Afdelningen, Kongliga Fysiografiska Sällskapets Handlingar*, 29(9): 144 pages, II plates.
1896. *Analecta algologica, Continuatio III. Lunds Universitets Årsskrift, Andra Afdelningen, Kongliga Fysiografiska Sällskapets Handlingar*, 32(2): 140 + 8 pages [index], I plate.
1898. *Species genera et ordines algarum*. Volume 3, part 3: [vi] + 239 pages. Lunda [Lund].
1899. *Analecta algologica, Continuatio V. Lunds Universitets Årsskrift, Andra Afdelningen, Kongliga Fysiografiska Sällskapets Handlingar*, 35(4): 160 pages, III plates.
- Agor, A.B.
 *1962. Blue-green and Brown Algae of Lucap Bay, Gulf of Lingayen. *National Science Development Board [Philippines], Science Bulletin*, 7:31–34, [13] figures.
- Aguilar-Santos, G., and M.S. Doty
 *1968. Chemical Studies on Three Species of the Marine Algal Genus *Caulerpa*. In H.D. Freudenthal, editor, *Drugs from the Sea: Transactions of the Drugs from the Sea Symposium, University of Rhode Island, 27–29 August 1967*, pages 173–176. Washington: Marine Technology Society.
- Allender, B.M., and G.T. Kraft
 1983. The Marine Algae of Lord Howe Island (New South Wales): the Dictyotales and Cutleriales (Phaeophyta). *Brunonia*, 6:73–130, 29 figures.
- Ambrohn, H.
 1880. Ueber einige Fälle von Bilateralität bei den Florideen. *Botanische Zeitung*, 38:161–174, 177–185, 193–200, 209–216, 225–233, plates III, IV.
- Amsler, C.D., and D.F. Kapraun
 1985. *Giffordia onslowensis* sp. nov. (Phaeophyceae) from the North Carolina Continental Shelf and the Relationship between *Giffordia* and *Acinetospora*. *Journal of Phycology*, 21:94–99, 6 figures.
- Ang, P.O., Jr.
 *1984. Preliminary Study on the Alginic Contents of *Sargassum* spp. in Balibago, Calatagan, Philippines. *Hydrobiologia*, 116/117:547–550, 2 figures.
- *1985a. Regeneration Studies of *Sargassum siliquosum* J. Ag. and *S. paniculatum* J. Ag. (Phaeophyta, Sargassaceae). *Botanica Marina*, 28:231–235, 2 figures.
- *1985b. Studies on the Recruitment of *Sargassum* spp. (Fucales: Phaeophyta) in Balibago, Calatagan, Philippines. *Journal of Experimental Marine Biology and Ecology*, 91:293–301.
- *1985c. Phenology of *Sargassum siliquosum* J. Ag. and *S. paniculatum* J. Ag. (Sargassaceae, Phaeophyta) in the Reef Flat of Balibago (Calatagan, Philippines). In *Proceedings of the Fifth International Coral Reef Congress, Tahiti, 27 May–1 June, 1985*, volume 5, pages 51–57, figures 1–5.
- Antonio, H.C.
 *1962. Useful Seaweeds in Philippine Shores. *Fisheries Gazette*, 6:12–13, concluded on page 11.
- Ardissone, F.
 1871. Rivista dei Ceramii della flora italiana. *Nuovo Giornale Botanico Italiano*, 3:32–50.
1883. *Phycologia mediterranea, Parte prima: Floridee. Memorie della Società Crittogamologica Italiana*, 1: x + 516 pages.
- 1886–1887. *Phycologia mediterranea, Parte IIa: Oosporee-Zoosporee-Schizosporee. Memorie della Società Crittogamologica Italiana*, 2:1–325. [1886 = pages 1–128; 1887 = 129–325.]
- Ardissone, F., and J. Strafforello
 1877. *Enumerazione delle alghe di Liguria*. 238 pages. Milano.
- Areschoug, J.E.
 1847. *Phycearum, quae in maribus Scandinaviae crescunt, enumeratio: Sectio prior Fucaeas continens. Nova Acta Regiae Societatis Scientiarum Upsaliensis*, 13:223–382, IX plates.
1850. *Phycearum, quae in maribus Scandinaviae crescunt, enumeratio: Sectio posterior Ulvaceas continens. Nova Acta Regiae Societatis Scientiarum Upsaliensis*, 14:385–454, III plates.
1851. *Phyceae capenses*. 32 pages. Upsala.
- *1852. Ordo XII: Corallineae. In J.G. Agardh, *Species genera et ordines algarum, Volumen secundum: algas florideas complectens*, pages 506–576. Lunda [Lund].
1854. *Spongocladia*, ett nytt algsläkte. *Öfversigt af Kongl. [Svenska] Vetenskaps-Akademiens Förhandlingar*, 10:201–209, plate II.
- Askenasy, E.
 *1888. Algen. In *Forschungsreise S.M.S. "Gazelle," IV Theil: Botanik*, [fascicle 2], 58 pages, XII plates. Berlin.
- Bailey, G.P., R. Rezak, and E.R. Cox
 1976. A Revision of Generic Concepts of Living Members in the Subfamily Acetabularieae (Dasycladaceae, Dasycladales) Based on Scanning Electron Microscopy. *Phycologia*, 15:7–18, 25 figures.
- Bailey, J.W., and W.H. Harvey
 *1862. Algae. In *United States Exploring Expedition: During the Years 1838, 1839, 1840, 1841, 1842; Under the Command of Charles Wilkes, U.S.N.*, volume 17, pages 153–192, IX plates. [Unofficial issue; official issue published 1874.]
- Barton, E.S.
 1891. A Systematic and Structural Account of the Genus *Turbinaria*, Lamx. *Transactions of the Linnean Society of London, Botany*, 3:215–226, plates LIV(54), LV(55).
- *1901. The Genus *Halimeda*. *Siboga-Expeditie Monographie*, 60: 32 pages, IV plates.
- Basson, P.W.
 1979. Marine Algae of the Arabian Gulf Coast of Saudi Arabia. *Botanica Marina*, 22:47–82, including XVI plates.
- Batters, E.A.L.
 1893. On the Necessity for Removing *Ectocarpus secundus*, Kütz., to a New Genus. *Grevillea*, 21:85–86.
1896. Some New British Marine Algae. *Journal of Botany*, 34:6–11.
1902. A Catalogue of the British Marine Algae. *Journal of Botany*, 40(supplement): 107 pages.
- Beck, G. von, and A. Zahlbruckner
 1898. Schedae ad "Kryptogamas exsiccatas" editae a Museo Palatino Vindobonensi, Centuria IV. *Annalen des K.K. Naturhistorischen Hofmuseums [Wien]*, 13:443–472, 2 figures.
- Berdach, J.T.
 *1980. *Haploplegma duperreyi* and *Dasyphila plumarioides* (Ceramiaceae, Rhodophyta) from Boracay Island, Aklan. *Kalikasan, Philippine Journal of Botany*, 9:99–103, 2 figures.
- Berkeley, M.J.
 1833. *Gleanings of British Algae; Being an Appendix to the Supplement to English Botany*. [vi] + 50 pages, 20 plates. London.
- *1842. Enumeration of Fungi, Collected by H. Cuming, Esq. F.L.S. in the Philippine Islands. *London Journal of Botany*, 1:142–157, plate VI: figures 4, 5; plate VII: figures 6–11.
- Bersamin, S.V., S.V. Laron, F.R. Gonzales, and R.B. Banania
 *1973. Some Seaweeds Consumed Fresh in the Philippines. *Philippine Journal of Fisheries*, 8:183–189.
- Biasoletto, B.
 1841. *Relazione del viaggio fatto nella primavera dell'anno 1838 dalla Maestà del Re Federico Augusto di Sassonia nell'Istria, Dalmazia, e Montenegro*. 264 pages, VI plates. Trieste.
- Blanco, G.J.
 *1938. Fisheries of Northeastern Luzon and the Babuyan and Batanes Islands. *Philippine Journal of Science*, 66:501–521, 5 plates.
- Blanco, M.
 *1837. *Flora de Filipinas*. lxxviii + 887 pages. Manila.
- *1845. *Flora de Filipinas*. Segunda impresión, lix + 619 pages. Manila.
- *1879. *Flora de Filipinas*. Gran edición, volume 3, 271 + vi pages. Manila.

Bliding, C.

1948. *Enteromorpha kylini*, eine neue Art aus der schwedischen Westküste. *Kungl. Fysiografiska Sällskapets i Lund Förhandlingar*, 18:199–204, 3 figures.
1955. *Enteromorpha intermedia*—a New Species from the Coasts of Sweden, England, and Wales. *Botaniska Notiser*, 108:253–262, 6 figures.
1960. A Preliminary Report on Some New Mediterranean Green Algae. *Botaniska Notiser*, 113:172–184, 11 figures.
1963. A Critical Survey of European Taxa in Ulvales, Part I: *Capso-siphon*, *Percursaria*, *Blidingia*, *Enteromorpha*. *Opera Botanica*, 8(3): 160 pages, 92 figures.
1969. A Critical Survey of European Taxa in Ulvales, II: *Ulva*, *Ulvaria*, *Monostroma*, *Kornmannia*. *Botaniska Notiser*, 121:535–629, 47 figures.

Bonnemaison, T.

1828. Essai sur les Hydrophytes articulées (ou articulées) de la famille des Épidermées et des Céramiées. *Mémoires du Muséum d'Histoire Naturelle* [Paris], 16:49–148, plates 3–8.

Børjesen, F.

1905. Contributions à la connaissance du genre *Siphonocladus* Schmitz. *Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger*, 1905:259–291, 13 figures.
1907. An Ecological and Systematic Account of the Caulerps of the Danish West Indies. *Kongelige Danske Videnskabernes Selskabs Skrifter*, 7.Række, Naturvidenskabelig og Mathematisk Afdeling, 4:337–392, 31 figures.
1909. Some New or Little Known West Indian Florideae. *Botanisk Tidsskrift*, 30:1–19, 11 figures, plates I, II.
1910. Some New or Little Known West Indian Florideae, II. *Botanisk Tidsskrift*, 30:177–207, 20 figures.
1911. Some Chlorophyceae from the Danish West Indies. *Botanisk Tidsskrift*, 31:127–152, 13 figures.
1912. Some Chlorophyceae from the Danish West Indies, II. *Botanisk Tidsskrift*, 32:241–273, 17 figures.
1913. The Marine Algae of the Danish West Indies, Part 1: Chlorophyceae. *Dansk Botanisk Arkiv*, 1(4): 160 pages, 126 figures.
- 1914a. The Species of *Sargassum* Found along the Coasts of the Danish West Indies with Remarks upon the Floating Forms of the Sargasso Sea. In H.F.E. Jungersen and E. Warming, editors, *Mindeskript i Anledning af Hundredaaret for Japetus Steenstrup's Fødsel*, article 32, 20 pages, 8 figures. København: Bianco Lunos.
- 1914b. The Marine Algae of the Danish West Indies, Part 2: Phaeophyceae. *Dansk Botanisk Arkiv*, 2(2): 68 pages, 44 figures.
1915. The Marine Algae of the Danish West Indies, Part 3: Rhodophyceae (1). *Dansk Botanisk Arkiv*, 3:1–80, figures 1–86.
1916. The Marine Algae of the Danish West Indies, Part 3: Rhodophyceae (2). *Dansk Botanisk Arkiv*, 3:81–144, figures 87–148.
1917. The Marine Algae of the Danish West Indies, Part 3: Rhodophyceae (3). *Dansk Botanisk Arkiv*, 3:145–240, figures 149–230.
1918. The Marine Algae of the Danish West Indies, Part 3: Rhodophyceae (4). *Dansk Botanisk Arkiv*, 3:241–304, figures 231–307.
1919. The Marine Algae of the Danish West Indies, Part 3: Rhodophyceae (5). *Dansk Botanisk Arkiv*, 3:305–368, figures 308–360.
1920. The Marine Algae of the Danish West Indies, Part 3: Rhodophyceae (6), with Addenda to the Chlorophyceae, Phaeophyceae, and Rhodophyceae. *Dansk Botanisk Arkiv*, 3:369–498, figures 361–435.
1924. Marine Algae from Easter Island. In C. Skottsberg, editor, *The Natural History of Juan Fernandez and Easter Island*, volume 2, pages 247–309, 50 figures.
1925. Marine Algae from the Canary Islands, Especially from Teneriffe and Gran Canaria, I: Chlorophyceae. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 5(3): 123 pages, 49 figures.

1927. Marine Algae from the Canary Islands, Especially from Teneriffe and Gran Canaria, III: Rhodophyceae, Part I: Bangiales and Nemalionales. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 6(6): 97 pages, 49 figures.
1932. A Revision of Forsskål's Algae Mentioned in Flora Aegyptiaco-Arabica and Found in his Herbarium in the Botanical Museum of the University of Copenhagen. *Dansk Botanisk Arkiv*, 8(2): 14 pages, 4 figures, 1 plate.
1934. Some Marine Algae from the Northern Part of the Arabian Sea with Remarks on Their Geographical Distribution. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 11(6): 72 pages, 8 figures, 11 plates.
1935. A List of Marine Algae from Bombay. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 12(2): 64 pages, 25 figures, X plates.
1936. Some Marine Algae from Ceylon. *Ceylon Journal of Science, Botany*, 12:57–96, 12 figures.
1937. Contributions to a South Indian Marine Algal Flora, I. *Journal of the Indian Botanical Society*, 16:1–56, 33 figures, plate I.
1938. Contributions to a South Indian Marine Algal Flora, III. *Journal of the Indian Botanical Society*, 17:205–242, 13 figures, plates VII, VIII.
1940. Some Marine Algae from Mauritius, I: Chlorophyceae. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 15(4): 81 pages, 26 figures, III plates.
1942. Some Marine Algae from Mauritius, III: Rhodophyceae, Part 1: Porphyridiales, Bangiales, Nemalionales. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 17(5): 63 pages, 27 figures, II plates.
1943. Some Marine Algae from Mauritius, III: Rhodophyceae, Part 2: Gelidiales, Cryptonemiales, Gigartinales. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 19(1): 85 pages, 42 figures, I plate.
1945. Some Marine Algae from Mauritius, III: Rhodophyceae, Part 4: Ceramiales. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 19(10): 68 pages, 35 figures.
1946. Some Marine Algae from Mauritius; An Additional List of Species to Part I: Chlorophyceae. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 20(6): 64 pages, 27 figures.
1949. On the Genus *Titanophora* (J. Ag.) Feldm. and Description of a New Species. *Dansk Botanisk Arkiv*, 13(4): 8 pages, II plates.
1950. Some Marine Algae from Mauritius; Additions to the Parts Previously Published, II. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 18(11): 46 pages, 22 figures.
1952. Some Marine Algae from Mauritius; Additions to the Parts Previously Published, IV. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 18(19): 72 pages, 33 figures, V plates.
1954. Some Marine Algae from Mauritius; Additions to the Parts Previously Published, VI. *Kongelige Danske Videnskabernes Selskab, Biologiske Meddelelser*, 22(4): 51 pages, 20 figures.

Bornet, É., and C. Flahault

- 1886–1888. Revision des Nostocacées hétérocystées contenues dans les principaux herbiers de France. *Annales des Sciences Naturelles, Botanique*, series 7, 3:323–381 [= 1886a]; 4:343–373 [= 1886b]; 5:51–129 [= 1887], 7:177–262 [= 1888]. [Article 13.1(e) of the International Code of Botanical Nomenclature specifies January 1, 1886, as the arbitrary date of publication of the entire work.]

Bornet, É., and G. Thuret

1876. *Notes algologiques*. Fascicle I, pages i–xx + 1–72, plates I–XXV. Paris.

Bory de Saint-Vincent, J.B.G.M.

- 1804a. *Voyage dans les quatre principales îles des mers d'Afrique*. Volume I, xvi + 408 pages. Paris.
- 1804b. *Voyage dans les quatre principales îles des mers d'Afrique*. Volume

- 2, 431 pages; Atlas: plates 1–14, 14[bis], 15–23, 23[bis], 24–56. Paris.
1822. Anabaine. *Dictionnaire Classique d'Histoire Naturelle*, 1:307–309.
1823. Cérarniaires. *Dictionnaire Classique d'Histoire Naturelle*, 3:339–341.
1825. Hydroclathre. *Dictionnaire Classique d'Histoire Naturelle*, 8:419–420.
- 1826–1829. Cryptogamie. In L.I. Duperrey, *Voyage autour du monde, exécuté par ordre du Roi, sur la corvette de Sa Majesté, "La Coquille," pendant les années 1822, 1823, 1824 et 1825*, 301 pages + Atlas (Histoire Naturelle, Botanique: plates 1–13, 13bis, 14–38). [1827 = pages 1–96; 1828 = 97–200; 1829 = 201–301; 1826 = Atlas.]
1827. Padine. *Dictionnaire Classique d'Histoire Naturelle*, 12:589–591.
1831. [Explication des planches:] Arthrodiées. *Dictionnaire Classique d'Histoire Naturelle*, 17:28–40, plates LI–LIII.
1834. Hydrophytes, Hydrophytae. In C. Bélanger, *Voyage aux Indes-Orientales . . . pendant les années 1825, 1826, 1827, 1828 et 1829: Botanique, Cryptogamie*, pages 159–178, plates XV, XVI. Paris.
- Borzi, A.
1892. Alge d'acqua dolce della Papuasie raccolte su cranii umani dissepoliti. *Nuova Notarisia*, 3:35–53.
- Brand, F.
1904. Über die Anheftung der Cladophoraceen und über verschiedene polynesische Formen dieser Familie. *Beihefte zum Botanischen Centralblatt*, 18(Abteilung I):165–193, plates V, VI.
- Buchan-Antalan, T.A., and G.C. Trono, Jr.
- *1983. The Morphology, Growth and Seasonality in the Reproductive States of *Acanthophora spicifera* (Vahl) Boergesen in Bacoar Bay. *Natural and Applied Science Bulletin* [University of the Philippines], 35:17–27, 5 figures.
- Burgan, B.G., K.A. Zseleczy, and F.J. Vande Vusse
- *1980. An Illustrated Key to Philippine Rabbitfishes, *Siganus* Species, with Descriptive and Ecological Notes. *Silliman Journal*, 26:99–114, 14 figures.
- Burman, N.L.
1768. *Flora indica: cui accedit series zoophytorum indicorum, nec non prodromus florae capensis*. Pages [i–iv] + 1–241 + [1–4 + 1–11] + 1–28, 25[bis]–28[bis], plates 1–21, 21*, 22–67. Lugdunum Batavorum [Leiden] and Amstelodamum [Amsterdam].
- Butters, F.K.
1911. Notes on the Species of *Liagora* and *Galaxaura* of the Central Pacific. *Minnesota Botanical Studies*, 4:161–184, plate XXIV.
- Cajipe, G.J.B.
- *1981. A Seaweed Primer. *The Filipinas Journal of Science and Culture*, 1:54–59.
- Cajipe, G.J.B., E.C. Laserna, R.L. Veroy, and A.H. Luistro
- *1980. On the Infrared Spectrum of a Polysaccharide Obtained by Alkaline Extraction of the Red Alga *Acanthophora spicifera* (Vahl) Boergesen. *Botanica Marina*, 23:69–70, 2 figures.
- Calumpong, H.P.
- *1980. Some Aspects of the Ecology of the Sea Hare, *Dolabella auricularia* (Lightfoot), in Central Visayas, Philippines. *Silliman Journal*, 26:134–146, 3 figures, 3 tables.
- *1982. Economically Important Species of Benthic Marine Algae in the Central Visayas, Philippines. *Silliman Journal*, 28:143–148.
- Cantoria, M.
- *1948. Red Algae as Sources of Agar. *Journal of the Philippine Pharmaceutical Association*, 35:26–27. [Abstract.]
- Cantoria, M., and P. Valenzuela
- *1950. Agar from Philippine *Hypnea* and *Gracilaria*. *Journal of the Philippine Pharmaceutical Association*, 37:271.
- Cantoria, M., P. Valenzuela, and G.T. Velasquez
- *1951. Pharmacopeial Properties of Agar from Three Philippine Seaweeds. *Journal of the Philippine Pharmaceutical Association*, 38:187–190, 3 figures.
- Cantoria, M., G.T. Velasquez, and P. Valenzuela
- *1951. A Botanical Study of Three Philippine Agar-yielding Seaweeds. *Journal of the Philippine Pharmaceutical Association*, 38:295–300, 3 figures.
- Carumbana, E.E., and J.A. Luchavez
- *1980. A Comparative Study of the Growth Rates of *Siganus canaliculatus*, *S. spinus*, and *S. guttatus* Reared under Laboratory and Seminal Conditions in Southern Negros Oriental, Philippines. *Silliman Journal*, 26:187–209, 10 figures.
- Castagne, L.
1851. *Supplément au catalogue des plantes qui croissent naturellement aux environs de Marseille*. 125 pages, plates 8–11. Aix.
- Castronuevo, P.C.
- *1979. Taxonomic Study on the Marine Benthic Algae of Borongan, and Vicinities with Notes on Their Economic Potential. *Journal of Graduate Research, Graduate School of the University of Santo Tomas*, 9:91–92. [Abstract of master's thesis.]
- Chamberlain, Y.M.
1983. Studies in the Corallinaceae with Special Reference to *Fosliella* and *Pneophyllum* in the British Isles. *Bulletin of the British Museum (Natural History), Botany*, 11:291–463, 89 figures.
- Chan, M.S.O.
- *1981. Species Diversity and Zonation of Epiphytes on Two Species of *Sargassum*. In *Proceedings of the Fourth International Coral Reef Symposium* [Manila, 1981], volume 2, pages 385–392, 9 figures.
- Chang, C.F., and B.M. Xia
1976. [Studies on Chinese Species of *Gracilaria*.] *Studia Marina Sinica*, 11:91–166, 42 figures, including II plates. [In Chinese.]
- Chapman, V.J.
1937. A Revision of the Marine Algae of Norfolk. *Journal of the Linnean Society of London, Botany*, 51:205–263, 37 figures, plate 22.
1961. The Marine Algae of Jamaica, Part I: Myxophyceae and Chlorophyceae. *Bulletin of the Institute of Jamaica, Science Series*, 12(1): 159 pages, 178 figures.
- Chauvin, J.F.
1842. *Recherches sur l'organisation, la fructification et la classification de plusieurs genres d'algues*. 132 pages. Caen.
- Chiang, Y.M.
1970. Morphological Studies of Red Algae of the Family Cryptonemiaceae. *University of California Publications in Botany*, 58: vi + 83 pages, 34 figures, 10 plates.
- Chou, R.C.-Y.
- *1945. Pacific Species of *Galaxaura*, I: Asexual Types. *Papers of the Michigan Academy of Science, Arts and Letters*, 30:35–56, 2 figures, XI plates.
- *1947. Pacific Species of *Galaxaura*, II: Sexual Types. *Papers of the Michigan Academy of Science, Arts and Letters*, 31:3–24, 3 figures, XIII plates.
- Clemente y Rubio, S. de R.
1807. *Ensayo sobre las variedades de la vida común que vegetan en Andalucía*. xviii + 324 pages. Madrid.
- Colina, A.B.
- *1974. A Study of the Culture of *Eucheuma striatum* in the Visayan Area. *Philippine Scientist* [University of San Carlos], 11:109. [Abstract of thesis.]
- *1975. Investigations on the Culture of *Eucheuma striatum* in the Philippines. *Philippine Scientist* [University of San Carlos], 12:125. [Abstract of thesis.]
- *1976. Studies on the Culture of *Eucheuma striatum*. *Philippine Scientist* [University of San Carlos], 13:48–61, 4 figures.
- Colinvaux, L.H.
1968. A New Species of *Halimeda*: A Taxonomic Reappraisal. *Journal of Phycology*, 4:30–35.

- Collado, E.G.
 *1926. Studies on the Nutritive Properties of Seaweeds. *Philippine Agriculturist*, 15:129-148, 3 figures.
- Collins, F.S.
 1901. The Algae of Jamaica. *Proceedings of the American Academy of Arts and Sciences*, 37:229-270, VI tables.
 1909. The Green Algae of North America. *Tufts College Studies (Science)*, 2:79-480, XVIII plates.
- Collins, F.S., and A.B. Hervey
 1917. The Algae of Bermuda. *Proceedings of the American Academy of Arts and Sciences*, 53:1-195, including VI plates.
- Collins, F.S., I. Holden, and W.A. Setchell
 1899. *Phycotheca Boreali-Americana*. Fascicle XIII, numbers 601-650. Malden, Massachusetts. [Exsiccatae.]
- Cordero, P.A., Jr.
 *1972. Philippine Algology: Its Beginnings and Development. *Leyte-Samar Studies*, 6:16-47.
 *1973a. A Noteworthy *Halimeda* Species from Eastern Samar. *Kalikasan, Philippine Journal of Biology*, 1:167-170, 4 figures.
 *1973b. On the Marine Algae of Biliran Island (Leyte) and Vicinities, Central Philippines. *Leyte-Samar Studies*, 7:15-37.
 *1974a. A New Variety of *Halimeda velasquezii* Taylor from Camiguin Island. *Kalikasan, Philippine Journal of Biology*, 2:114-117, 1 figure.
 *1974b. [Distribution of *Caulerpa brachypus* Harvey (Chlorophyta) in Japan and Adjacent Regions.] *Nankiseibutu* [Journal of the Nanki Biological Society], 16:6-9, 2 figures. [In Japanese.]
 *1974c. Phycological Observations, I: Genus *Porphyra* of the Philippines, Its Species and Their Occurrences. *Bulletin of the Japanese Society of Phycology*, 22:134-142, 4 figures.
 *1975. Phycological Observations, III: On the Occurrence of Genus *Actinotrichia* in the Philippines. *Publications of the Seto Marine Biological Laboratory*, 22:267-276, 3 figures.
 *1976a. Phycological Observations, IV: Two Noteworthy Species of *Caulerpa* (Chlorophyta) from the Philippines. *Publications of the Seto Marine Biological Laboratory*, 23:83-87, 2 figures.
 *1976b. Phycological Observations, II: *Porphyra marcosii*, a New Species from the Philippines. *Acta Manilana* [University of Santo Tomas Research Center], series A, 15(24):14-24, figures A-H, including 1 plate.
 *1976c. The Marine Algae of Batan Island, Northern Philippines, I: Cyanophyceae and Phaeophyceae. *Fisheries Research Journal of the Philippines*, 1(2):3-29, figures A-O.
 *1977a. Studies on Philippine Marine Red Algae. *Special Publications from the Seto Marine Biological Laboratory*, 4: 258 pages, 268 figures, XXVIII plates.
 *1977b. The Marine Algae of Batan Island, Northern Philippines, II: Chlorophyceae. *Fisheries Research Journal of the Philippines*, 2(1):19-55, including VII plates [= 45 figures].
 *1977c. Phycological Observations, V: Gross Morphological Polymorphisms in *Caulerpa brachypus* (Caulerpaceae, Chlorophyta) from the Philippines, with Notes on Their Taxonomy. *Bulletin of the Japanese Society of Phycology*, 25(supplement):25-30, 3 figures.
 *1978a. The Marine Algae of Batan Island, Northern Philippines, III: Rhodophyceae. *Fisheries Research Journal of the Philippines*, 3(1):13-64.
 *1978b. Phycological Observations, VIII: Additional Notes on Genus *Caulerpa* from the Philippines. *Fisheries Research Journal of the Philippines*, 3(2):44-51, 3 figures.
 *1979a. Phycological Observations, IX: Additional Notes on the Occurrence and Seasonality of the Genus *Porphyra* in the Philippines. *Acta Manilana* [University of Santo Tomas Research Center], series A, 18:20-35, 4 figures.
 *1979b. Phycological Observations, VI: Mangrove-associated Algae from Aklan, Philippines. *Kalikasan, Philippine Journal of Biology*, 7:275-296, 5 figures.
 *1979c. Phycological Observations, X: On the Phyco-geographical Distribution of Two Codiaceae Marine Algae in the Philippines and Adjacent Regions. *Fisheries Research Journal of the Philippines*, 4(2):52-63, 3 figures.
 *1980a. Phycological Observations, VII: On the Occurrence and Phyco-geographical Distribution of *Sargassum duplicatum* and *Halicornyne wrightii* in the Philippines. *Publications of the Seto Marine Biological Laboratory*, 25:27-38, 4 figures.
 *1980b. Taxonomy and Distribution of Philippine Useful Seaweeds. *National Research Council of the Philippines, Bulletin*, 81: [xiv +] 78 pages, figures 1-16, 18-25; 44 + [16] plates.
 *1980c. Species of Marine Macro-algae New to the Philippines. *Fisheries Research Journal of the Philippines*, 5(2):69-72, 4 figures.
 *1981a. Phycological Observations, XIV: *Acrocystis nana* Zanardini, a New Algal Record for the Philippines. *Publications of the Seto Marine Biological Laboratory*, 26:171-175, 2 figures.
 *1981b. Phycological Observations, XIII: Two Unreported Marine Benthic Rhodophytes from Iloilo, Philippines. *Acta Manilana* [University of Santo Tomas Research Center], series A, 20:22-28, 2 figures.
 *1981c. Eco-morphological Observation of the Genus *Sargassum* in Central Philippines, Including Notes on Their Biomass and Bed Determination. In *Proceedings of the Fourth International Coral Reef Symposium* [Manila, 1981], volume 2, pages 399-409, 1 figure.
 *1981d. Some Epiphytic Marine Algae of Aklan, Philippines. *Fisheries Research Journal of the Philippines*, 6(2):59-67, 6 figures.
 *1982a. A Preliminary Study on the "Ethnobotany of Philippine Edible Seaweeds, Especially from Ilocos Norte and Cagayan Provinces." *Acta Manilana* [University of Santo Tomas Research Center], series A, 21:54-79, 14 figures.
 *1982b. Phycological Observations, XI: Some Noteworthy Marine Benthic Phaeophyceans of the Philippines. *Fisheries Research Journal of the Philippines*, 7(2):31-37, 3 figures. [Printed X, changed by author to XI on reprint.]
 *1983. Phycological Observations, XV: Occurrence of the Red Alga *Balliella subcorticata* in the Philippines. *Kalikasan, Philippine Journal of Biology*, 12:189-190, 1 figure.
 *1984a. Phycological Observations, XX: Marine Algae in the Vicinity of the Bureau of Fisheries and Aquatic Resources Marine Station, Bobon Bay, Ilocos Norte. *Ilocos Fisheries Journal*, 1(2):67-117.
 *1984b. Phycological Observations, XVII: Records of Western Palawan Algae Particularly from Lipuun Point, Quezon and Nearby Islets. *Pulong* [Divine Word University, Tacloban], 7:55-69.
 *1984c. Phycological Observations, XVIII: Some Marine Macro-algae from Southern Masbate. *Pulong* [Divine Word University, Tacloban], 8:49-58. [Printed XXII, changed by author to XVIII on reprint.]
- Cordero, P.A., Jr., and T. Tanaka
 *1972. Genus *Halimeda* from Camiguin Island, Northern Philippines. *Bulletin of the Japanese Society of Phycology*, 20:83-89, 2 figures.
- Cornejo, D.F., and G.T. Velasquez
 *1972. Study on the Algal Epiphytes of Exposed and Protected Marine Waters of Batangas Province. *Philippine Journal of Science*, 99:165-190, 1 figure, 5 plates.
- Cribb, A.B.
 1958. Records of Marine Algae from South-eastern Queensland, IV: *Caulerpa*. *University of Queensland, Department of Botany, Papers*, 3:209-220, including 5 plates.
- Crouan, P.L., and H.M. Crouan
 1852. *Algues marines du Finistère*. 404 specimens with printed labels. Brest. [Exsiccatae.]
 1860. Liste des algues marines découvertes dans le Finistère depuis la publication des algues de ce département en 1852. *Bulletin de la Société Botanique de France*, 7:367-373.

1867. *Florule du Finistère*. x + 262 pages, 31 + [1] plates. Paris and Brest.
- Dawson, E.Y.
1944. The Marine Algae of the Gulf of California. *Allan Hancock Pacific Expeditions*, 3:189–453, including plates 31–77.
- 1949a. Studies of Northeast Pacific Gracilariaceae. *Allan Hancock Foundation Publications, Occasional Papers*, 7: 105 pages, including 25 plates.
- 1949b. Contributions toward a Marine Flora of the Southern California Channel Islands, I–III. *Allan Hancock Foundation Publications, Occasional Papers*, 8: 57 pages, including 15 plates.
- 1950a. Notes on Some Pacific Mexican Dictyotaceae. *Bulletin of the Torrey Botanical Club*, 77:83–93, 3 figures.
- 1950b. Notes on Pacific Coast Marine Algae, IV. *American Journal of Botany*, 37:149–158, 29 figures.
- 1950c. A Review of *Ceramium* along the Pacific Coast of North America with Special Reference to Its Mexican Representatives. *Farlowia*, 4:113–138, including 4 plates.
1953. Marine Red Algae of Pacific Mexico, Part I: Bangiales to Corallinaceae subf. Corallinoideae. *Allan Hancock Pacific Expeditions*, 17:1–239, including plates 1–33.
- *1954a. Notes on Tropical Pacific Marine Algae. *Bulletin of the Southern California Academy of Sciences*, 53:1–7, 4 figures.
- 1954b. The Marine Flora of Isla San Benedicto following the Volcanic Eruption of 1952–1953. *Allan Hancock Foundation Publications, Occasional Papers*, 16: 25 pages, including 5 plates.
1957. An Annotated List of Marine Algae from Eniwetok Atoll, Marshall Islands. *Pacific Science*, 11:92–132, 31 figures.
1958. Notes on Pacific Coast Marine Algae, VII. *Bulletin of the Southern California Academy of Sciences*, 57:65–80, 12 figures.
1960. New Records of Marine Algae from Pacific Mexico and Central America. *Pacific Naturalist*, 1(19/20):31–52, 7 figures.
1963. New Records of Marine Algae from the Galapagos Islands. *Pacific Naturalist*, 4:3–23, including 5 plates.
- Dawson, E.Y., C. Acleto, and N. Foldvik
1964. The Seaweeds of Peru. *Beihefte zur Nova Hedwigia*, 13: 111 pages, 81 plates.
- Decaisne, J.
1839. Note sur le genre *Amansia*. *Annales des Sciences Naturelles, Botanique*, series 2, 11:373–376.
1841. Plantes de l'Arabie Heureuse, recueillies par M.P.-E. Botta. *Archives du Muséum d'Histoire Naturelle* [Paris], 2:89–199, plates V–VII.
1842. Essais sur une classification des algues et des polypiers calcifères de Lamouroux. *Annales des Sciences Naturelles, Botanique*, series 2, 17:297–380, plates 14–17; 18:96–128. [Second part, appearing in volume 18, bears subtitle, “Mémoire sur les corallines ou polypiers calcifères.”]
1844. Note sur quelques algues à frondes réticulées. *Annales des Sciences Naturelles, Botanique*, series 3, 2:233–236.
- De Candolle, A.P.
1815. *Flora française*. Troisième édition, volume 5, [x] + 662 pages. Paris.
- De Leon, A.I., N. Eufemio, and M. Pineda
- *1963. Chemical Composition of Some Philippine Algae. *Philippine Journal of Science*, 92:77–87.
- De Leon, C.A.
- *1974. Studies on the Carrageenan Content of Various Species of *Euclima* and Other Allied Genera. *Acta Manilana* [University of Santo Tomas Research Center], series A, 12:30–47, [18] figures.
- De Leon, C.A., and J.S. Domantay
- *1971. Studies on Some Philippine Rhodophytes and Their Colloidal Contents. *Acta Manilana* [University of Santo Tomas Research Center], series A, 8:3–38, including 9 plates.
- de Leon, W., J. Leyva, and L. Martinez-Pesigan
- *1947. The Possibility of Agar-agar Industry in the Philippines. *Journal of the Philippine Pharmaceutical Association*, 34:381–384.
- Delile, A.R.
1813. Flore d'Égypte, Explication des planches. In France, Commission d'Égypte, *Description de l'Égypte: Histoire naturelle*, volume 2, pages 145–320. [Atlas, 62 plates, 1826.] Paris.
- Delle Chiaje, S.
1829. *Hydrophytologiae regni neapolitani icones*. Fascicle 1, 16 pages, plates 1–50; fascicle 2, 11 pages, plates 51–100. Neapolis [Naples].
- de los Reyes, P.M.
- *1967. Observations on Some Economically Important Algae of Biliran Island. *Leyte-Samar Studies*, 1:228–235, 2 figures, [1] plate.
- Denizot, M.
1968. *Les Algues Floridées encroustantes (à l'exclusion des Corallinacées)*. 310 pages, 227 figures. Paris: privately published.
- Desfontaines, R.
- 1798–1799. *Flora atlantica*. Volume 2, 458 pages, plates 121–261. Parisii [Paris]. [1798 = pages 1–160, plates 121–180; 1799 = pages 161–458, plates 181–261.]
- Desmazières, J.B.H.J.
1858. *Plantes cryptogames de France*. Troisième édition, fascicules 11/12, numbers 501–600. Lille. [Exsiccatae.]
- De Toni, G.B.
- *1889. Chlorophyceae. In *Sylloge algarum*, volume I, cxxxix + 1315 pages. Patavium [Padua].
1891. Systematische Uebersicht der bisher bekannten Gattungen der echten Fucoideen. *Flora*, 74:171–182.
- *1895a. Phyceae japonicae novae addita enumeratione algarum in ditione maritima Japoniae hucusque collectarum. *Memorie del Reale Istituto Veneto di Scienze, Lettere ed Arti*, 25(5): 78 pages, II plates.
- *1895b. Fucoideae. In *Sylloge algarum*, volume III, xvi + 638 pages. Patavium [Padua].
1897. Florideae, Sectio I. In *Sylloge algarum*, volume IV, pages i–xx + i–lxi + 1–388. Patavium [Padua].
- *1900. Florideae, Sectio II. In *Sylloge algarum*, volume IV, pages 387[bis], 388[bis], 389–776. Patavium [Padua].
1903. Florideae, Sectio III. In *Sylloge algarum*, volume IV, pages 775–1525. Patavium [Padua].
- *1924. Florideae, Section V, Additamenta. In *Sylloge algarum*, volume VI, xi + 767 pages. Patavium [Padua].
- De Toni, G.B., and K. Okamura
1895. Neue Meeresalgen aus Japan. *Berichte der Deutschen Botanischen Gesellschaft*, 12:(72)–(78), plate XVI.
- De Toni, Giuseppe [filius]
1936. *Noterelle di nomenclatura algologica, VIII: Terzo elenco di Missoficee omonime*. [6] pages. Brescia: privately published.
- Díaz-Piferrer, M.
- 1969a. *Ceramiella jolyi*, a New Species of Rhodophyta from Puerto Rico. *Caribbean Journal of Science*, 8:199–205, including II plates.
- 1969b. *Caulerpa hummii*, a New Species of Marine Algae (Chlorophyta, Caulerpaceles) from Venezuela. *Phycologia*, 7:12–17, 1 figure.
- 1969c. The Genus *Ceramiella* in the Caribbean and Its Biological Significance. *Caribbean Journal of Science*, 9:53–58.
- Dickie, G.
- *1874a. On the Algae of Mauritius. *Journal of the Linnean Society of London, Botany*, 14:190–202.
- 1874b. [Enumeration of the Algae Collected at St. Thomas and Bermuda by H.N. Moseley, M.A., Naturalist to H.M.S. “Challenger.”] *Journal of the Linnean Society of London, Botany*, 14:312–316.
- *1876a. Contributions to the Botany of the Expedition of H.M.S. “Challenger.”—Algae, Chiefly Polynesian. *Journal of the Linnean*

- Society of London, Botany*, 15:235–246.
- *1876b. Notes on Algae Collected by H.N. Moseley, M.A., of H.M.S. "Challenger," Chiefly Obtained in Torres Straits, Coasts of Japan, and Juan Fernandez. *Journal of the Linnean Society of London, Botany*, 15:446–455.
- *1877. Supplemental Notes on Algae Collected by H.N. Moseley, M.A., of H.M.S. "Challenger," from Various Localities. *Journal of the Linnean Society of London, Botany*, 15:486–489.
- Dillwyn, L.W.
1802–1809. *British Confervae*. 87 + [6] pages, plates 1–109 + A–G. [1802 = plates 1–20; 1803 = 21–38; 1804 = 39–44; 1805 = 45–56; 1806 = 57–68, 70–81; 1807 = 82–93; 1808 = 94–99; 1809 = 69, 100–109, A–G, pages 1–87, + [1–6, Index, and Errata].] London.
- Dixon, P.S.
1967. The Typification of *Fucus cartilagineus* L. and *F. corneus* Huds. *Blumea*, 15:55–62.
- Domantay, J.S.
*1962. An Ecological Survey of the Marine Vegetation of the Hundred Islands and Vicinity. *Philippine Journal of Science*, 90:271–295.
*1968. Aquatic Biological Resources of the Philippines. *Acta Manilana* [University of Santo Tomas Research Center], series A, 1:24–58.
- Donaire, T.C.
*1981. The Culture of Seaweeds in the Philippines with Emphasis on *Eucheuma* Culture in Bohol Province. In G.C. Trono, Jr. and E.T. Ganzon-Fortes, editors, *Report on the Training Course on Gracilaria Algae*, pages 165–170. Manila. [United Nations, Food and Agriculture Organization, South China Sea Fisheries Development and Coordinating Programme, Work Plan Implementation (General), SCS/GEN/81/29.]
- Doty, M.S.
*1969. The *Eucheuma* Opportunity. *Science Review* [Philippines], 10(8):4–11, figures A–E.
*1985. *Eucheuma alvarezii* sp. nov. (Gigartinales, Rhodophyta) from Malaysia. In I.A. Abbott and J.N. Norris, editors, *Taxonomy of Economic Seaweeds with Reference to Some Pacific and Caribbean Species*, pages 37–45, 8 figures. [California Sea Grant College Program Report, T-CSGCP-011.]
- Doty, M.S., and I.A. Abbott
*1964. Studies in the Helminthocladiaceae, III: *Liagoropsis*. *Pacific Science*, 18:441–452, 18 figures.
- Doty, M.S., and V.B. Alvarez
*1973. Seaweed Farms: A New Approach for U.S. Industry. In *Proceedings of the 9th Annual Conference of the Marine Technology Society* [Washington, D.C., 1973], pages 701–708, 3 figures.
*1981. *Eucheuma* Farm Productivity. In *Proceedings of the Eighth International Seaweed Symposium* [Bangor, North Wales, 1974], pages 688–691.
- Doty, M.S., and J.N. Norris
*1985. *Eucheuma* Species (Solieriaceae, Rhodophyta) That Are Major Sources of Carrageenan. In I.A. Abbott and J.N. Norris, editors, *Taxonomy of Economic Seaweeds with Reference to Some Pacific and Caribbean Species*, pages 47–67, 6 figures. [California Sea Grant College Program Report, T-CSGCP-011.]
- Drew, K.M.
1928. A Revision of the Genera *Chantransia*, *Rhodochorton*, and *Acrochaetium*, with Descriptions of the Marine Species of *Rhodochorton* (Naeg.) gen. emend. on the Pacific Coast of North America. *University of California Publications in Botany*, 14:139–224, plates 37–48.
- Drouet, F.
*1968. Revision of the Classification of the Oscillatoriaceae. *Academy of Natural Sciences of Philadelphia, Monographs*, 15: [vi] + 370 pages, 131 figures.
*1973. *Revision of the Nostocaceae with Cylindrical Trichomes (Formerly Scytonemataceae and Rivulariaceae)*. [xi] + 292 pages, 83 figures. New York: Hafner.
- *1978. Revision of the Nostocaceae with Constricted Trichomes. *Beihefte zur Nova Hedwigia*, 57: [iii] + 258 pages, 42 figures.
1981. Revision of the Stigonemataceae with a Summary of the Classification of the Blue-green Algae. *Beihefte zur Nova Hedwigia*, 66: 221 pages, 109 figures.
- Drouet, F., and W.A. Daily
1948. Nomenclatural Transfers among Coccoid Algae. *Lloydia*, 11:77–79.
- *1956. Revision of the Coccoid Myxophyceae. *Butler University Botanical Studies*, 12:1–218, 377 figures.
- Ducker, S.C.
*1967. The Genus *Chlorodesmis* (Chlorophyta) in the Indo-Pacific Region. *Nova Hedwigia*, 13:145–182, plates 25–43.
1969. Additions to the Genus *Chlorodesmis* (Chlorophyta). *Phycologia*, 8:17–20, 3 figures.
- Ducluzeau, J.A.P.
1805. *Essai sur l'histoire naturelle des Conferves des environs de Montpellier*. 89 pages. Montpellier.
- Durairatnam, M.
1961. Contribution to the Study of the Marine Algae of Ceylon. *Bulletin of the Fisheries Research Station of Ceylon*, 10: 181 pages, including XXXII plates.
- Egerod, L.E.
1952. An Analysis of the Siphonous Chlorophycophyta with Special Reference to the Siphonocladales, Siphonales, and Dasycladales of Hawaii. *University of California Publications in Botany*, 25:325–453, including plates 29–42, 23 figures.
- Ellis, J.
1768. Extract of a Letter from John Ellis, Esquire, F.R.S. to Dr. Linnaeus, of Upsal, F.R.S. on the Animal Nature of the Genus of Zoophytes, called *Corallina*. *Philosophical Transactions of the Royal Society of London*, 57:404–420, plate XVII.
- Ellis, J., and D. Solander
1786. *The Natural History of Many Curious and Uncommon Zoophytes, Collected from Various Parts of the Globe by the Late John Ellis . . . Systematically Arranged and Described by the Late Daniel Solander*. xii + 208 pages, 63 plates. London.
- Endlicher, S.L.
1843. *Mantissa botanica altera: Sistens generum plantarum supplementum tertium*. 111 pages. Vindobona [Vienna].
- Esguerra, R.S.
*1953. Enumeration of Algae in Philippine Baños Fishponds and in the Digestive Tract of the Fish with Notes on Conditions Favorable for Their Growth. *Philippine Journal of Fisheries*, 1:171–192.
- Esper, E.J.C.
1800. *Icones fucorum*. Fascicle 4, pages 167–217, plates LXXXVIII–CXI. Nürnberg.
1802. *Icones fucorum*. Fascicle 5 [= part 2, fascicle 1], pages 1–53, plates CXII–CXXXV. Nürnberg.
[1805–1812]. *Die Pflanzenthier*. Part 3, fascicle 15, pages 93–144, various plates. Nürnberg. [This serialized work has never been satisfactorily collated.]
- Eubank, L.L.
1946. Hawaiian Representatives of the Genus *Caulerpa*. *University of California Publications in Botany*, 18:409–431, including plate 22, 2 figures.
- Falkenberg, P.
1901. Die Rhodomelaceen des Golfes von Neapel und der angrenzenden Meeres-Abschnitte. *Fauna und Flora des Golfes von Neapel, Monographie*, 26: xvi + 754 pages, 10 figures, 24 plates. Berlin.
- Fan, K.C.
*1956. Revision of *Calothrix* Ag. *Revue Algologique*, series 2, 2:154–178, 6 figures.

- Fan, K.C., and Y.C. Wang
1974. [Studies on the Marine Algae of Hsisha Islands, China, I: *Gan-onema* gen. nov.] *Acta Phytotaxonomica Sinica*, 12:489-495, including plates 94, 95. [In Chinese.]
- Farghaly, M.E.-S.
*1980. *Algues benthiques de la Mer Rouge et du Bassin Occidental de l'Océan Indien (étude taxinomique et essai de répartition, notamment des Udotécées)*. 274 + [25] pages, XLIV plates. [Thesis, Université des Sciences et Techniques du Langedoc, Montpellier.]
- Farlow, W.G.
1876. List of the Marine Algae of the United States. *Report of the United States Fish Commissioner*, 1873/1875:691-718.
1877. On Some Algae New to the United States. *Proceedings of the American Academy of Arts and Sciences*, 12:235-245.
- Feldmann, G.
1945. Révision du genre *Botryocladia* Kylin (Rhodophycées-Rhody-méniacées). *Bulletin de la Société d'Histoire Naturelle de l'Afrique du Nord*, 35:49-61, 5 figures.
- Feldmann, J.
1938. Sur un nouveau genre de Siphonocladacées. *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences* [Paris], 206:1503-1504.
1941. Les algues marines de la Côte des Albères, IV: Rhodophycées (suite). *Revue Algologique*, 12:77-100, figures 26-34.
1950. Sur l'existence d'une alternance de générations entre l'*Halicystis parvula* Schmitz et le *Derbesia tenuissima* (De Not.) Crn. *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences* [Paris], 230:322-323.
1955. Les plastes des *Caulerpa* et leur valeur systématique. *Revue Générale de Botanique*, 62:422-431, 2 figures.
1962. The Rhodophyta Order Acrochaetiales and Its Classification. In *Proceedings of the Ninth Pacific Congress* [Bangkok, 1957], volume 4, pages 219-221.
- Feldmann, J., and G. Feldmann
1943. Recherches sur les Bonnemaisoniacees et leur alternance de générations. *Annales des Sciences Naturelles, Botanique*, series 11, 3:75-175, 26 figures, 2 plates.
- Feldmann, J., and G. Hamel
1934. Observations sur quelques Géliadiacées. *Revue Générale de Botanique*, 46:528-549, 11 figures.
- Feldmann-Mazoyer, G.
1941. *Recherches sur les Céramiacées de la Méditerranée occidentale*. 510 pages, 191 figures, IV plates. [Printing finished 6 June 1940, but not used as thesis until 17 May 1941.]
- Fensholt, D.E.
1952. A Revision of the Genus *Cystophyllum*. *Summaries of Doctoral Dissertations . . . Submitted to the Graduate School of Northwestern University*, 19:560-563.
1955. An Emendation of the Genus *Cystophyllum* (Fucales). *American Journal of Botany*, 42:305-322, 51 figures.
- Figari, A., and G. De Notaris
1853. Nuovi materiali per l'algologia del mar Rosso. *Memorie della Reale Accademia delle Scienze di Torino*, series 2, 13:133-169, 1 plate.
- Flores-Sian, N.
*1959. Proximate Chemical Composition and the Inorganic Constituents of Three Philippine Brown Seaweeds. *Centro Escolar University, Graduate and Faculty Studies*, 10:88-99.
- Forsskål, P.
1775. *Flora aegyptiaco-arabica: Post mortem auctoris edidit Carsten Niebuhr*. 32 + cxxvi + 219 pages. Haunia [Copenhagen].
- Fortes, M.D.
*1979. Studies on Farming the Seaweed *Caulerpa* (Chlorophyta, Siphonales) in Two Mangrove Areas in the Philippines. In *Mangrove & Estuarine Vegetation in Southeast Asia. BIOTROP Special Publication*, 10:111-119, 3 figures.
- *1981a. Inventory and Production of Natural Seaweed Stocks at Calatagan, Batangas. In G.C. Trono, Jr. and E.T. Ganzon-Fortes, editors, *Report on the Training Course on Gracilaria Algae*, pages 107-120. Manila. [United Nations, Food and Agriculture Organization, South China Sea Fisheries Development and Coordinating Programme, Work Plan Implementation (General), SCS/GEN/81/29.]
- *1981b. Community Structure and Productivity of Microphytic Algae in Philippine Reefs. In *Proceedings of the Fourth International Coral Reef Symposium* [Manila, 1981], volume 2, pages 393-398, 4 figures.
- Fortes, M.D., and G.C. Trono, Jr.
*1980. Marine Algal Microphytes New to the Philippines. *Kalikasan, Philippine Journal of Biology*, 8:51-68, 15 figures.
- Foslie, M.
1895. New or Critical Lithothamnina. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1895:1-10, 1 plate.
1897. On Some Lithothamnina. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1897(1): 20 pages.
1898. Systematical Survey of the Lithothamnina. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1898(2): 7 pages.
- *1900a. New or Critical Calcareous Algae. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1899(5): 34 pages.
1900b. Calcareous Algae from Funafuti. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1900(1): 12 pages.
1900c. Five New Calcareous Algae. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1900(3): 6 pages.
1900d. Revised Systematical Survey of the Melobesieae. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1900(5): 22 pages.
1901a. New Melobesieae. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1900(6): 24 pages.
1901b. Corallinaceae. In J. Schmidt, *Flora of Koh Chang: Contributions to the Knowledge of the Vegetation in the Gulf of Siam*, Part II. *Botanisk Tidsskrift*, 24:15-22.
- *1901c. Three New Lithothamnina. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1901(1): 5 pages.
1903. Den botaniske samling. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1902(7):23-25. [Aarsberetning for 1902.]
- *1904. Lithothamnionaceae, Melobesieae, Mastophoreae. In A. Weber-van Bosse and M. Foslie, *The Corallinaceae of the Siboga Expedition. Siboga-Expeditie Monographie*, 61:10-77, figures 3-32, plates I-XIII.
1907. Algologiske notiser, III. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1906(8): 34 pages.
- *1908. Nye kalkalger. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1908(12): 9 pages.
1909. Algologiske notiser, VI. *Kongelige Norske Videnskabers Selskabs Skrifter*, 1909(2): 63 pages.
- *1929. *Contributions to a Monograph of the Lithothamnina: After the Author's Death Collected and Edited by Henrik Printz*. 60 pages, LXXV plates. Trondhjem: Kongelige Norske Videnskabers Selskab Museet.
- Fredericq, S., and J.N. Norris
1985. Morphological Studies on Some Tropical Species of *Gracilaria* Grev. (Gracilariaceae, Rhodophyta): Taxonomic Concepts Based on Reproductive Morphology. In I.A. Abbott and J.N. Norris, editors, *Taxonomy of Economic Seaweeds with Reference to Some Pacific and Caribbean Species*, pages 137-155, 26 figures. [California Sea Grant College Program Report, T-CSGCP-011.]
- Frémy, P.
1930. Les Myxophycées de l'Afrique équatoriale française. *Archives de Botanique, Mémoires*, 3(2): 508 pages, 362 figures.
1932. Cyanophycées vivant dans le thalle des *Codium*. *Comptes Rendus Hebdomadaires des Séances de l'Académie des Sciences* [Paris], 195:1413-1414.

- Fries, E.M.
1835–1837. *Corpus florarum provincialium Sueciae, I: Floram scanicam scripsit Elias Fries*. xxiv + 394 pages. Upsalia [Uppsala]. [1835 = pages 1–192; 1836 = 193–346, i–xxiv; 1837 = 347–394.]
- Funk, G.
1955. Beiträge zur Kenntnis der Meeresalgen von Neapel zugleich mikrophotographischer Atlas. *Pubblicazione della Stazione Zoologica di Napoli*, 25(supplement): x + 178 pages, 36 figures, XXX plates.
- Gaillon, B.
1828. Thalassiophytes. *Dictionnaire des Sciences Naturelles* [Levrault], 53:350–406.
- Galutira, E.C., and G.T. Velasquez
*1964. Taxonomy, Distribution and Seasonal Occurrence of Edible Marine Algae in Ilocos Norte, Philippines. *Philippine Journal of Science*, 92:483–522, 9 plates.
- Ganzon-Fortes, E.T.
*1981. Introduction to the Seaweeds: Their Characteristics and Economic Importance. In G.C. Trono, Jr., and E.T. Ganzon-Fortes, editors, *Report on the Training Course on Gracilaria Algae*, pages 17–25. Manila. [United Nations, Food and Agriculture Organization, South China Sea Fisheries Development and Coordinating Programme, Work Plan Implementation (General), SCS/GEN/81/29.]
*1983. *Laurencia tronoi* (Rhodophyta, Ceramiales), a New Species from Calatagan, Batangas, Philippines. *Kalikasan, Philippine Journal of Biology*, 11:404–409, 2 figures.
- Ganzon-Fortes, E.T., and G.C. Trono, Jr.
*1982. Reproductive Morphology and Periodicity of *Laurencia* sp. at Calatagan, Batangas, Philippines. *Kalikasan, Philippine Journal of Biology*, 11:27–38, 4 figures.
- Garbary, D.J., G.I. Hansen, and R.F. Scagel
1981. The Marine Algae of British Columbia and Northern Washington: Division Rhodophyta (Red Algae), Class Bangiophyceae. *Syesis*, 13:137–195, 15 figures.
- Garbary, D.J., and H.W. Johansen
1982. Scanning Electron Microscopy of *Corallina* and *Halitilon* (Corallinales, Rhodophyta): Surface Features and Their Taxonomic Implications. *Journal of Phycology*, 18:211–219, 13 figures.
- Garcia, C.O.
*1979. A Preliminary Report on the Screening of Marine Algae for Antibacterial Properties. *Mindanao Journal, Mindanao State University*, 5(3):41–45.
- Gardner, N.L.
1917. New Pacific Coast Marine Algae, I. *University of California Publications in Botany*, 6:377–416, plates 31–35.
1918. New Pacific Coast Marine Algae, III. *University of California Publications in Botany*, 6:455–486, plates 38–41.
1919. New Pacific Coast Marine Algae, IV. *University of California Publications in Botany*, 6:487–496, plate 42.
1927a. New Myxophyceae from Porto Rico. *Memoirs of the New York Botanical Garden*, 7:1–144, including plates 1–23.
1927b. New Rhodophyceae from the Pacific Coast of North America, VI. *University of California Publications in Botany*, 14:99–138, plates 20–36.
1932. The Myxophyceae of Porto Rico and the Virgin Islands. In *New York Academy of Sciences, Scientific Survey of Porto Rico and the Virgin Islands*, volume 8 (part 2), pages 249–311, plates 1, 2.
- Garelli, G.
1857. Saggio intorno alle muffe nell'acque termali di Valdieri. *Gazzetta Medica Italiana, Stati Sardi*, 1857:35. [Not seen.]
- Geesink, R.
1973. Experimental Investigations on Marine and Freshwater *Bangia* (Rhodophyta) from the Netherlands. *Journal of Experimental Marine Biology and Ecology*, 11:239–247, 6 figures.
- Geitler, L.
1942. Schizophyta: Klasse Schizophyceae. In A. Engler and K. Prantl, editors, *Die natürlichen Pflanzenfamilien, Zweite Auflage*, volume 1b, 232 pages, 156 figures. Leipzig: Wilhelm Engelmann.
- Gepp, A., and E.S. Gepp
1904. *Rhipidosiphon* and *Callipsigma*. *Journal of Botany*, 42:363–366, plate 467.
1908. Marine Algae (Chlorophyceae and Phaeophyceae) and Marine Phanerogams of the "Sealark" Expedition, Collected by J. Stanley Gardiner, M.A., F.R.S., F.L.S. *Transactions of the Linnean Society of London, Botany*, 7:163–188, plates 22–24.
*1911. The Codiaceae of the Siboga Expedition Including a Monograph of Flabellarieae and Udoteae. *Siboga-Expeditie Monographie*, 62: 150 pages, XXII plates.
- Gilbert, W.J.
*1942. Notes on *Caulerpa* from Java and the Philippines. *Papers of the Michigan Academy of Science, Arts and Letters*, 27:7–26, 5 figures.
*1943. Studies on Philippine Chlorophyceae, I: The Dasycladaceae. *Papers of the Michigan Academy of Science, Arts and Letters*, 28:15–35, 3 figures.
*1946. Studies on Philippine Chlorophyceae, II: Survey of Literature and List of Recorded Species Prior to 1940. *Bulletin of the Torrey Botanical Club*, 73:73–79.
*1947. Studies on Philippine Chlorophyceae, III: The Codiaceae. *Bulletin of the Torrey Botanical Club*, 74:121–132, 1 figure.
*1961. An Annotated Checklist of Philippine Marine Chlorophyta. *Philippine Journal of Science*, 88:413–451, 1 figure, plate 1.
*1978. Observations on *Dasycladus* C. Agardh and *Chlorocladus* Sonder (Dasycladales, Chlorophyta) and Description of *Chlorocladus philippinensis* Gilbert sp. nov. *Phycologia*, 17:305–310, 18 figures.
- Gilbert, W.J., and M.S. Doty
*1969. Some Additional Records of Philippine Marine Chlorophyta. *Micronesica*, 5:121–130, 19 figures.
- Gmelin, J.F.
1792. *Caroli a Linné . . . Systema naturae per regna tria naturae: Editio decima tertia*. Volume 2, part 2, pages 885–1661. Lipsia [Leipzig].
- Gmelin, S.G.
1768. *Historia fucorum*. [8] + 239 + 6 pages, plates IA, IB, IIA, IIB, III–XXXIII. Petropolis [Leningrad].
- Gomont, M.
1890. Essai de classification des Nostocacées homocystées. *Journal de Botanique*, 4:349–357.
1892–1893. Monographie des Oscillariées (Nostocacées homocystées). *Annales des Sciences Naturelles, Botanique*, series 7, 15:263–368, plates 6–14 [= 1892]; 16:91–264, plates 1–7 [= 1893]. [Article 13.1(e) of the International Code of Botanical Nomenclature specifies 1 January 1892, as the arbitrary date of publication of the entire work.]
1893. Sur quelques *Phormidium* à thalle rameux. *Bulletin de la Société Botanique de France*, 40:LXXXVI–xc, plate IV.
1901. Myxophyceae hormogoneae. In J. Schmidt, Flora of Koh Chang: Contributions to the Knowledge of the Vegetation in the Gulf of Siam, Part IV. *Botanisk Tidsskrift*, 24:202–211, plate 5.
- Goodenough, S., and T.J. Woodward
1977. Observations on the British Fuci, with Particular Descriptions of Each Species. *Transactions of the Linnean Society of London*, 3:84–235, plates 16–19.
- Gordon, G.D., T. Masaki, and H. Akioka
1976. Floristic and Distributional Account of the Common Crustose Coralline Algae on Guam. *Micronesica*, 12:247–277, including XI plates, 1 figure.
- Goreau, T.F., and E.A. Graham
1967. A New Species of *Halimeda* from Jamaica. *Bulletin of Marine Science*, 17:432–441, 10 figures.

- Grateloup, J.P.A.S.
1806. Descriptiones aliquorum Ceramiorum novorum, cum iconum explicationibus. [Appendix, with one unnumbered page and one unnumbered plate, to:] *Observations sur la Constitution de l'Été de 1806*. Montpellier.
- Gray, J.E.
1864. *Handbook of British Water-weeds or Algae: The Diatomaceae* by W. Carruthers. iv + 123 pages. London.
1866. On *Anadyomene* and *Microdictyon*, with the Description of Three New Allied Genera, Discovered by Menzies in the Gulf of Mexico. *Journal of Botany*, 4:41–51, 65–72, plate XLIV.
- Gray, S.F.
1821. *A Natural Arrangement of British Plants*. Volume I, xxviii + 824 pages, 21 plates. London.
- Greville, R.K.
1827. Some Account of a Collection of Cryptogamic Plants from the Ionian Islands. *Transactions of the Linnean Society of London*, 15:335–348, plate 3.
1829. Descriptiones novarum specierum ex algarum ordine. *Verhandlungen der Leopoldinisch-Carolinischen Akademie der Naturforscher*, 14:421–424, plate XXVI.
1830. *Algae britannicae*. lxxxviii + 218 pages, XIX plates. Edinburgh.
1849. *Algae orientales*: Descriptions of New Species Belonging to the Genus *Sargassum*. *Annals and Magazine of Natural History*, series 2, 3:106–109, 216–219, 254–257, 503–506, plates 4, 9–11.
- Grunow, A.
*1867. *Algae*. In E. Fenzl, editor, *Reise der Österreichischen Fregatte Novara um die Erde in den Jahren 1857, 1858, 1859: Botanischer Theil, Erster Band: Sporenpflanzen*, pages 1–104, plates I, Ia, II–XI.
1874. Algen der Fidschi-, Tonga- und Samoa-Inseln, gesammelt von Dr. E. Graeffe. *Journal des Museums Godeffroy* [Hamburg], 3:23–50.
1915–1916. Additamenta ad cognitionem Sargassorum. *Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien*, 65:329–448 [= 1915]; 66:1–48, 136–185 [= 1916].
- Gunnerus, J.E.
1772. *Flora norvegica*. Part 2, [iv] + viii + 148 + [60] pages, IX plates. Hafnia [Copenhagen].
- Guzman, P.E. de
*1981. Morphological Study, Recipe Development and Sensory Evaluation of the Sea Vegetables (Seaweeds) of Luzon. *National Research Council of the Philippines, Bulletin*, 84:42–54.
- Hamel, G.
1924. Floridées de France, II. *Revue Algologique*, 1:427–457, figures III–VII.
1927. *Recherches sur les Genres Acrochaetium Naeg. et Rhodochorton Naeg.* 117 pages, 47 figures. Saint-Lo. [Thesis, Université de Paris.]
1937. *Phéophycées de France*. Fascicle III, pages 177–240, figures 40–46. Paris.
1939. *Phéophycées de France*. Fascicle V, pages I–XLVII + 337–432, figures 56–60, X plates. Paris.
- Hamoy, E.A., and L.O. Garciano
*1975. A Preliminary Report on Studies of the Mangrove Swamp Ecosystem of Silut Bay, Liloan, Cebu. *Philippine Scientist* [University of San Carlos], 12:67–74, 1 figure. [Abstract.]
- Hariot, P.
1889. Algues. In *Mission Scientifique du Cap Horn, 1882–1883; Tome V: Botanique*, pages 3–109, plates I–IX.
1891. Liste des algues marines rapportées de Yokoska (Japon) par M. le Dr. Savatier. *Mémoires de la Société des Sciences Naturelles et Mathématiques de Cherbourg*, 27:211–230.
- Hartog, C. den
1972. The Effect of the Salinity Tolerance of Algae on Their Distribution, as Exemplified by *Bangia*. In *Proceedings of the Seventh International Seaweed Symposium* [Sapporo, 1971], pages 274–276.
- Harvey, W.H.
1833. Confervoideae. In W.J. Hooker, *British Flora*, volume II, part 1, pages 259–261, 322–385. [= J.E. Smith, *The English Flora*, volume V, part I.]
1834a. Notice of a Collection of Algae, Communicated to Dr. Hooker by the Late Mrs. Charles Telfair, from "Cap Malheureux," in the Mauritius; with Descriptions of Some New and Little Known Species. *Journal of Botany* [Hooker], 1:147–157, plates CXXV, CXXVI.
1834b. Algological Illustrations, No. I: Remarks on Some British Algae, and Descriptions of New Species Recently Added to Our Flora. *Journal of Botany* [Hooker], 1:296–305, plates CXXXVIII, CXXXIX.
1838. *The Genera of South African Plants*. lxvi + 429 pages. Cape Town.
1841. *A Manual of the British Algae*. lvii + 229 pages. London.
1847–1849. *Nereis australis*. viii + 124 pages, L plates. London. [1847 = pages i–viii + 1–64, plates I–XXV; 1849 = pages 65–124, plates XXVI–L.]
1847–1851. *Phycologia britannica*. Volumes II and III, plates CXXI–CCCLX. London. [1847 = plates CXXI–CXLIV; 1848 = CXLV–CCXVI; 1849 = CCXVII–CCCVI; 1850 = CCCVII–CCCLIV; 1851 = CCCLV–CCCLX.]
1849. *A Manual of the British Marine Algae*. lii + 252 pages, 27 plates. London.
1852. *Nereis boreali-americana*, Part I: Melanospermeae. *Smithsonian Contributions to Knowledge*, 3(4): 150 pages, plates I–XII.
1853. *Nereis boreali-americana*, Part II: Rhodospermeae. *Smithsonian Contributions to Knowledge*, 5(5): 258 pages, plates XIII–XXXVI.
1854. Short Characters of Three New Algae from the Shores of Ceylon. *Hooker's Journal of Botany*, 6:143–145, plates V, VI.
1855. Some Account of the Marine Botany of the Colony of Western Australia. *Transactions of the Royal Irish Academy*, 22(Science):525–566.
1857. *Algae*. In Narrative of the Expedition of an American Squadron to the China Seas and Japan, Performed in the Years 1852, 1853, and 1854, under the Command of Commodore M.C. Perry, United States Navy, Volume II. *Senate of the Thirty-third Congress, Second Session, Executive Document*, 79:331–332.
1858. *Nereis boreali-americana*, Part III: Chlorospermeae. *Smithsonian Contributions to Knowledge*, 10(2): 140 pages, plates XXXVII–L.
1859. *Phycologia australica*. Volume 2, viii pages, plates LXI–CXX. London.
1860a. Characters of New Algae, Chiefly from Japan and Adjacent Regions, Collected by Charles Wright in the North Pacific Exploring Expedition under Captain John Rodgers. *Proceedings of the American Academy of Arts and Sciences*, 4:327–335.
1860b. *Phycologia australica*. Volume II, viii pages, plates CXXI–CLXXX. London.
1860c. *Algae*. In J.D. Hooker, *The Botany of the Antarctic Voyage of H.M. Discovery Ships "Erebus" and "Terror," in the Years 1839–1843, under the Command of Captain Sir James Clark Ross, Part III: Flora Tasmaniae, Volume II: Monocotyledones and Acotyledones*, pages 282–343, plates 185–196. London.
1863. *Phycologia australica*. Volume V, lxxiii pages [Synopsis], plates CCXLI–CCC. London.
- Harvey, W.H., and J.W. Bailey
*1851. [Description of Seventeen New Species of Algae, Collected by the United States Exploring Expedition.] *Proceedings of the Boston Society of Natural History*, 3:370–373.
- Hauck, F.
1883–1885. Die Meeresalgen Deutschlands und Oesterreichs. In *Dr.*

- L. Rabenhorst's Kryptogamen-Flora von Deutschland, Oesterreich und der Schweiz, Zweite Auflage*, volume 2, xxiv + 575 pages, 236 figures. [1883 = pages 1–320, figures 1–131; 1884 = pages 321–512, figures 132–227; 1885 = pages 513–575 + i–xxiv, figures 228–236.]
- 1886–1887. Ueber einige von J.M. Hildebrandt im Rothen Meere und Indischen Ocean gesammelte Algen. *Hedwigia*, 25:165–168, 217–221, [1] figure [= 1886]; 26:18–21, 41–45 [= 1887].
1888. Meeresalgen von Puerto-Rico. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie*, 9:457–470.
- Heerebout, G.R.
1968. Studies on the Erythropeltidaceae (Rhodophyceae—Bangio-phyceidae). *Blumea*, 16:139–157, 19 figures.
- Hering, [C.]
1841. Diagnoses algarum novarum a cl. Dre. Ferdinand Krauss in Africa australi lectarum. *Annals and Magazine of Natural History*, 8:90–92.
- Heydrich, F.
- *1894. Beiträge zur Kenntniss der Algenflora von Ost-Asien, besonders der Insel Formosa, Molukken- und Liu-kiu-Inseln. *Hedwigia*, 33:267–306, plates XIV, XV.
- 1897a. Neue Kalkalgen von Deutsch-Neu-Guinea (Kaiser Wilhelms-Land). *Bibliotheca Botanica*, 7(41): 11 pages, 1 figure, 1 plate.
- 1897b. Corallinaceae, insbesondere Melobesiae. *Berichte der Deutschen Botanischen Gesellschaft*, 15:34–70, 3 figures, plate III.
- 1897c. Melobesiae. *Berichte der Deutschen Botanischen Gesellschaft*, 15:403–420, plate XVIII.
1901. Die Lithothamnien des Museum d'histoire naturelle in Paris. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie*, 28:529–545, plate XI.
1905. *Polystrota*, eine Squamariaceae aus den Tropen. *Berichte der Deutschen Botanischen Gesellschaft*, 23:30–36, plate I.
- Hillis, L.W.
- *1959. A Revision of the Genus *Halimeda* (Order Siphonales). *Publications of the Institute of Marine Science* [University of Texas], 6:321–403, including 12 plates.
- Hillis-Colinvaux, L.
- *1975. *Halimeda renschii* Revived and *Halimeda batanensis* (Chlorophyta, Siphonales). *Phycologia*, 14:93–97, 1 figure.
- *1980. Ecology and Taxonomy of *Halimeda*: Primary Producer of Coral Reefs. *Advances in Marine Biology*, 17:1–327, 104 figures.
- Hoek, C. van den
1963. *Revision of the European Species of Cladophora: Proefschrift . . . Rijksuniversiteit te Leiden*. xi + 248 pages, 1 figure, 55 plates. Leiden: E.J. Brill.
- *1982. A Taxonomic Revision of the American Species of *Cladophora* (Chlorophyceae) in the North Atlantic Ocean and Their Geographic Distribution. *Verhandelingen der Koninklijke Nederlandse Akademie van Wetenschappen, Afdeling Natuurkunde, Tweede Reeks*, 78: 236 pages, including 39 plates, 4 figures.
- Hoek, C. van den, S. Vannajan, and G.C. Trono, Jr.
- *1977. The Marine Benthic Algae of Manila Bay, I: Introduction, Cyanophyta and Chlorophyta. *Kaliksán, Philippine Journal of Biology*, 6:33–46, 17 figures.
- *1978. The Marine Benthic Algae of Manila Bay, II: Phaeophyta and Rhodophyta. *Kaliksán, Philippine Journal of Biology*, 7:7–30, 40 figures.
- Hollenberg, G.J.
1942. An Account of the Species of *Polysiphonia* on the Pacific Coast of North America, I: *Oligosiphonia*. *American Journal of Botany*, 29:772–785, 21 figures.
1958. Phycological Notes, II. *Bulletin of the Torrey Botanical Club*, 85:63–69, 2 figures.
- *1968a. An Account of the Species of *Polysiphonia* of the Central and Western Tropical Pacific Ocean, I. *Oligosiphonia*. *Pacific Science*, 22:56–98, 43 figures.
- *1968b. An Account of the Species of the Red Alga *Polysiphonia* of the Central and Western Tropical Pacific Ocean, II. *Polysiphonia*. *Pacific Science*, 22:198–207, 5 figures.
- *1968c. An Account of the Species of the Red Alga *Herposiphonia* Occurring in the Central and Western Tropical Pacific Ocean. *Pacific Science*, 22:536–559, 25 figures.
- *1968d. Phycological Notes, III: New Records of Marine Algae from the Central Tropical Pacific Ocean. *Brittonia*, 20:74–82, 7 figures.
- Hollenberg, G.J., and I.A. Abbott
1966. *Supplement to Smith's Marine Algae of the Monterey Peninsula*. xii + 130 pages, 53 figures. Stanford: Stanford University Press.
1968. New Species of Marine Algae from California. *Canadian Journal of Botany*, 46:1235–1251, 14 figures.
- Hollenberg, G.J., and E.Y. Dawson
1961. Marine Red Algae of Pacific Mexico, Part 5: The Genus *Polysiphonia*. *Pacific Naturalist*, 2:345–375, including 7 plates.
- Holmes, E.M.
1896. New Marine Algae from Japan. *Journal of the Linnean Society of London, Botany*, 31:248–260, plates 7–12.
- Holmgren, P.K., W. Keuken, and E.K. Schofield, editors
1981. Index Herbariorum, Part I: The Herbaria of the World. Seventh Edition. *Regnum Vegetabile*, 106: vii + 452 pages.
- Hommersand, M.H.
1963. The Morphology and Classification of Some Ceramiaceae and Rhodomelaceae. *University of California Publications in Botany*, 35:i–vii + 165–366, including 6 plates, 52 figures.
- Hooker, J.D., and W.H. Harvey
- 1845a. Algae Antarcticae, Being Characters and Descriptions of the Hitherto Unpublished Species of Algae, Discovered in Lord Auckland's Group, Campbell's Island, Kerguelen's Land, Falkland Islands, Cape Horn and other Southern Circumpolar Regions, during the Voyage of H.M. Discovery Ships "Erebus" and "Terror." *London Journal of Botany*, 4:249–276, 293–298.
- 1845b. Algae Novae Zelandiae. *London Journal of Botany*, 4:521–551.
1847. Algae Tasmanicae: Being a Catalogue of the Species of Algae Collected on the Shores of Tasmania by Ronald Gunn, Esq., Dr. Jeannerett, Mrs. Smith, Dr. Lyall, and Dr. J.D. Hooker; with Characters of the New Species. *London Journal of Botany*, 6:397–417.
- Hooker, W.J.
1833. Class XXIV, Cryptogamia. In J.E. Smith, *The English Flora*, volume V, part 1, pages i–x + 1*–4* + 1–432. London.
- Howe, M.A.
1904. Notes on Bahaman Algae. *Bulletin of the Torrey Botanical Club*, 31:93–100, plate 6.
1905. Phycological Studies, II: New Chlorophyceae, New Rhodophyceae, and Miscellaneous Notes. *Bulletin of the Torrey Botanical Club*, 32:563–586, plates 23–29.
1907. Phycological Studies, III: Further Notes on *Halimeda* and *Avrainvillea*. *Bulletin of the Torrey Botanical Club*, 34:491–516, plates 25–30.
1909. Phycological Studies, IV: The Genus *Neomeris* and Notes on Other Siphonales. *Bulletin of the Torrey Botanical Club*, 36:75–104, plates 1–8.
1911. Phycological Studies, V: Some Marine Algae of Lower California, Mexico. *Bulletin of the Torrey Botanical Club*, 38:489–514, 1 figure, plates 27–34.
1914. The Marine Algae of Peru. *Memoirs of the Torrey Botanical Club*, 15:1–185, 44 figures, 66 plates.
1915. Report on a Visit to Porto Rico for Collecting Marine Algae.

- Journal of the New York Botanical Garden*, 16:219–225.
1918. Class 3, Algae. In N.L. Britton, *Flora of Bermuda (Illustrated)*, pages 489–540. New York.
1920. Algae. In N.L. Britton and C.F. Millspaugh, *The Bahama Flora*, pages 553–618. New York.
- *1932. Marine Algae from the Islands of Panay and Negros (Philippines) and Niuafoou (between Samoa and Fiji). *Journal of the Washington Academy of Sciences*, 22:167–170, 1 figure.
1934. Hawaiian Algae Collected by Dr. Paul C. Galtsoff. *Journal of the Washington Academy of Sciences*, 24:32–42, 5 figures.
- Hudson, W.
1762. *Flora anglica*. viii + [vii] + 506 + [22] pages. Londinum [London].
1778. *Flora anglica*. Editio altera, xxxviii + 690 pages. Londinum [London].
- Hurtado-Ponce, A.Q.
- *1983. Marine Macrobenenthic Algae of Currimao, Ilocos Norte. *Ilocos Fisheries Journal*, 1(1):104–149.
- *1984. List of Edible Seaweeds of Currimao, Ilocos Norte. *Ilocos Fisheries Journal*, 1(2):179–181.
- Hurtado-Ponce, A., and R.B. Modelo, Jr.
- *1983. Marine Macrobenenthic Green Algae of Currimao, Ilocos Norte, Luzon. *Kalikasan, Philippine Journal of Biology*, 12:145–149.
- Hus, H.T.A.
1900. Preliminary Notes on West-coast Porphyras. *Zoe*, 5:61–70.
- Irvine, L.M.
1976. Appendix II. In M. Parke and P.S. Dixon, Check-List of British Marine Algae—Third Revision. *Journal of the Marine Biological Association of the United Kingdom*, 56:590.
- Islam, A.K.M.N.
1976. Contribution to the Study of the Marine Algae of Bangladesh. *Bibliotheca Phycologica*, 19: [iii] + 253 pages, 438 figures.
- Itono, H.
1969. The Genus *Antithamnion* (Ceramiales) in Southern Japan and Adjacent Waters, I. *Memoirs of the Faculty of Fisheries, Kagoshima University*, 18:29–45, 7 figures.
1973. Notes on Marine Algae from Hateruma Island, Ryukyu. *Botanical Magazine [Tokyo]*, 86:155–168, 35 figures.
1977. Studies on the Ceramiales Algae (Rhodophyta) from Southern Parts of Japan. *Bibliotheca Phycologica*, 35: 499 pages, 72 figures.
- Itono, H., and T. Tanaka
1973. *Balliella*, a new Genus of Ceramiales (Rhodophyta). *Botanical Magazine [Tokyo]*, 86:241–252, 23 figures.
- Jaasund, E.
1969. Marine Algae in Tanzania, I. *Botanica Marina*, 12:255–274, 10 figures.
1970. Marine Algae in Tanzania, III. *Botanica Marina*, 13:65–70, 3 figures.
- Jacquin, N.J.
1786. *Collectanea ad botanicam, chemiam, et historiam naturalem spectantia*. Volume I, 386 pages, 22 plates. Vindobona [Vienna].
1789. *Collectanea ad botanicam, chemiam, et historiam naturalem spectantia*. Volume III, 306 pages, 23 plates. Vindobona [Vienna].
- Jadin, F.
1893. Algues des îles Mascareignes récoltées en 1890 (Nostocacées). *Bulletin de la Société Botanique de France*, 40:CXLVIII–CLXXIII.
- Johansen, H.W.
1976. Family Corallinales. In I.A. Abbott and G.J. Hollenberg, *Marine Algae of California*, pages 379–419, figures 321–372. Stanford: Stanford University Press.
1977. The Articulated Corallinales (Rhodophyta) of South Africa, I: *Cheilosporum* (Decasie) Zanardini. *Journal of South African Botany*, 43:163–185, 34 figures.
- Joly, A.B.
1957. Contribuição ao conhecimento da flora ficológica marinha da baía de Santos e arredores. *Boletim de Faculdade de Filosofia, Ciências e Letras, Universidade de São Paulo, Botânica*, 14: 199 pages, 3 figures, XIX plates.
- Jones, R., and G.T. Kraft
- *1984. The Genus *Codium* (Codiales, Chlorophyta) at Lord Howe Island (N.S.W.). *Brunonia*, 7:253–276, 13 figures.
- Jürgens, G.H.B.
1816. *Algae aquaticae quas et in littora maris Dynastiam Jeveranam et Frisiam orientalem alluentis rejectas et in harum terrarum aquis habitantes*. Decade 2, numbers 1–10. Hannover. [Exsiccatae.]
- Kawaguchi, S., and M. Masuda
1984. The Identity of *Gigartina prolifera* Hariot (Rhodophyta). *Japanese Journal of Phycology*, 32:227–233, 3 figures.
- Kjellman, F.R.
1877. Om Spetsbergens marina, klorofyllförande Thalophyter, II. *Bihang til Kongliga Svenska Vetenskaps-Akademiens Handlingar*, 4(6): 61 pages, V plates.
1889. Om Beringhafvets algflora. *Kongliga Svenska Vetenskaps-Akademiens Handlingar*, [series 4], 23(8): 58 pages, VII plates.
- 1897a. Japanska arter af släktet *Porphyra*. *Bihang til Kongliga Svenska Vetenskaps-Akademiens Handlingar*, 23(part III, number 4): 34 pages, 5 plates.
- 1897b. Marina chlorophyceer från Japan. *Bihang til Kongliga Svenska Vetenskaps-Akademiens Handlingar*, 23(part III, number 11): 44 pages, 7 figures, 7 plates.
1900. Om Floridé-släktet *Galaxaura*, dess organografi och systematik. *Kongliga Svenska Vetenskaps-Akademiens Handlingar*, [series 4], 33(1): 109 pages, 20 plates.
- Kobara, T., and M. Chihara
1984. Laboratory Culture and Taxonomy of Two Species of *Pedobesia* (Bryopsidales, Chlorophyceae) in Japan. *Botanical Magazine, Tokyo*, 97:151–161, 37 figures.
- Kornmann, P.
1938. Zur Entwicklungsgeschichte von *Derbesia* und *Halicystis*. *Planta*, 28:464–470, 4 figures.
1972. Ein Beitrag zur Taxonomie der Gattung *Chateomorpha* (Cladophorales, Chlorophyta). *Helgoländer Wissenschaftliche Meeresuntersuchungen*, 23:1–31, 22 figures.
- Kraft, G.T.
- *1970. *Eucheuma procrusteanum*, a New Red Algal Species from the Philippines. *Phycologia*, 8:215–219, 7 figures.
- *1972. Preliminary Studies of Philippine *Eucheuma* Species (Rhodophyta), Part I: Taxonomy and Ecology of *Eucheuma arnoldii* Weber-van Bosse. *Pacific Science*, 26:318–334, 18 figures.
- *1976. The Morphology of *Beckerella scalaramosa*, a New Species of Gelidiales (Rhodophyta) from the Philippines. *Phycologia*, 15:85–91, 15 figures.
- *1984. Taxonomic and Morphological Studies of Tropical and Subtropical Species of *Callophycus* (Solieriaceae, Rhodophyta). *Phycologia*, 23:53–71, 56 figures.
- *1986. The Green Algal Genera *Rhipitiopsis* A. and E.S. Gepp and *Rhipiliella* gen. nov. (Udoteaceae, Bryopsidales) in Australia and the Philippines. *Phycologia*, 25:47–72, 54 figures.
- Krauss, F.
1846. Pflanzen des Cap- und Natal-Landes, gesammelt und zusammengestellt von Dr. Ferdinand Krauss. (Schluss.) *Flora*, 29:209–219.
- Krishnamurthy, V., and M. Baluswami
1982. Some Species of Ectocarpaceae New to India. *Seaweed Research and Utilisation*, 5:103–112, 68 figures.
1983. Some Species of Ectocarpaceae New to India. *Seaweed Research and Utilisation*, 6:47–48.

Kuntze, O.

1891. *Revisio generum plantarum*. Part 1, pages i-clvi + 1-374; part 2, pages 375-1011. Leipzig.
 1898. *Revisio generum plantarum*. Part 3(2), pages i-vi + 1-576. Leipzig.

Kützing, F.T.

1841. Ueber *Ceramium*. *Linnaea*, 15:727-746.
 1843a. Ueber die Eigenthümlichkeit der Vegetation in den chinesischen und japanischen Meeren. *Botanische Zeitung*, 1:53-57.
 1843b. *Phycologia generalis*. xxxii + 458 pages, 80 plates. Leipzig.
 1845. *Phycologia germanica*. x + 340 pages. Nordhausen.
 1847a. Diagnosen und Bemerkungen zu neuen oder kritischen Algen. *Botanische Zeitung*, 5:1-5, 22-25, 33-38, 52-55, 164-167, 177-180, 193-198, 219-223.
 1847b. *Tabulae phycologicae*. Volume I, fascicles 3-5, pages 17-36, plates 21-50. Nordhausen.
 *1849. *Species algarum*. vi + 922 pages. Lipsia [Leipzig].
 1853. *Tabulae phycologicae*. Volume III, 28 pages, 100 plates. Nordhausen.
 1855. *Tabulae phycologicae*. Volume V, ii + 30 pages, 100 plates. Nordhausen.
 1856. *Tabulae phycologicae*. Volume VI, iv + 35 pages, 100 plates. Nordhausen.
 1857. *Tabulae phycologicae*. Volume VII, 40 pages, 100 plates. Nordhausen.
 1858. *Tabulae phycologicae*. Volume VIII, ii + 48 pages, 100 plates. Nordhausen.
 1859. *Tabulae phycologicae*. Volume IX, viii + 42 pages, 100 plates. Nordhausen.
 1860. *Tabulae phycologicae*. Volume X, iv + 39 pages, 100 plates. Nordhausen.
 1862. *Tabulae phycologicae*. Volume XII, iv + 30 pages, 100 plates. Nordhausen.
 1863. Diagnosen und Bemerkungen zu drei und siebenzig neuen Algenspecies. In *Zur der öffentlichen Prüfung sämtlicher Klassen der Realschule zu Nordhausen, welche Freitag den 27. März und Sonnabend den 28. März veranstaltet werden soll*, pages 1-19. Nordhausen. [Reprinted, *Hedwigia*, 2:86-95 (1863).]
 1864. *Tabulae phycologicae*. Volume XIV, [iv] + 35 pages, 100 plates. Nordhausen.
 1866. *Tabulae phycologicae*. Volume XVI, [iv] + 35 pages, 100 plates. Nordhausen.
 1867. *Tabulae phycologicae*. Volume XVII, [iv] + 30 pages, 100 plates. Nordhausen.
 1868. *Tabulae phycologicae*. Volume XVIII, [iv] + 35 pages, 100 plates. Nordhausen.
 1869. *Tabulae phycologicae*. Volume XIX, iv + 36 pages, 100 plates. Nordhausen.

Kylin, H.

1906. Zur Kenntnis einiger schwedischen *Chantransia*-Arten. In *Botaniska Studier tillägnade F.R. Kjellman den 4 November 1906*, pages 113-126, 9 figures. Uppsala.
 1931. Die Florideenordnung Rhodymeniales. *Lunds Universitets Årsskrift, Ny Följd, Andra Afdelningen*, 27(11): 48 pages, 8 figures, 20 plates.
 1941. Californische Rhodophyceen. *Lunds Universitets Årsskrift, Ny Följd, Andra Afdelningen*, 37(2): 51 pages, 7 figures, 13 plates.
 *1956. *Die Gattungen der Rhodophyceen*. xv + 673 pages, 458 figures. Lund: C.W.K. Gleerups Förlag.

Kylin, H., and C. Skottsberg

1919. Zur Kenntnis der subantarktischen und antarktischen Meeresalgen, II: Rhodophyceen. *Wissenschaftliche Ergebnisse der Schwedischen Südpolar-Expedition 1901-1903 unter Leitung von Dr. Otto Nordenskjöld*, 4(fascicle 15): 88 pages, 38 figures, 1 plate.

Laite, P., and M. Ricohermoso

- *1981. Revolutionary Impact of *Eucheuma* Cultivation in the South China Sea on the Carrageenan Industry. In *Proceedings of the Xth International Seaweed Symposium* [Göteborg, 1980], pages 595-600.

Lamarck, J.B. de

1801. *Système des animaux sans vertèbres*. viii + 432 pages. Paris.
 1815. Sur les polypiers corticifères. *Mémoires du Muséum d'Histoire Naturelle* [Paris], 1:401-416, 467-476; 2:76-84, 157-164, 227-240.
 1816. *Histoire naturelle des animaux sans vertèbres*. Volume 2, 568 pages. Paris.

Lamarck, J.B. de, and A.P. De Candolle

1805. *Flore française, troisième édition*. Volume 2, xii + 600 pages. Paris.

Lamouroux, J.V.F.

1805. *Dissertations sur plusieurs espèces de Fucus*. xxiv + 83 pages, XXXVI plates. Agen.
 1809a. Exposition des caractères du genre *Dictyota*, et tableau des espèces qu'il renferme. *Journal de Botanique* [Desvaux], 2:38-44.
 1809b. Observations sur la physiologie des algues marines, et description de cinq nouveaux genres de cette famille. *Société Philomatique de Paris, Nouveau Bulletin des Sciences*, 1:330-333, plate 6: figure 2.
 1813. Essai sur les genres de la famille des thalassiophytes non articulées. *Annales du Muséum National d'Histoire Naturelle* [Paris], 20:21-47, 115-139, 267-293, plates 7-13.
 1816. *Histoire des polypiers coralligènes flexibles, vulgairement nommés zoophytes*. lxxxiv + 559 pages, XIX plates. Caen.
 1821. *Exposition méthodique des genres de l'ordre des polypiers*. viii + 115 pages, 84 plates. Paris.

Laserna, E.C., G.J.B. Cajipe, R.L. Veroy, and A.H. Luistro

- *1978. Spectrofluorimetric Assay of Carrageenan and Agar from Philippine Seaweeds. *Kalikasan, Philippine Journal of Biology*, 7:110-116, 1 figure.

Laserna, E.C., R.L. Veroy, A.H. Luistro, and G.J.B. Cajipe

- *1981. Extracts from Some Red and Brown Seaweeds of the Philippines. In *Proceedings of the Xth International Seaweed Symposium* [Göteborg, 1980], pages 443-448, 1 figure.

Laserna, E.C., R.L. Veroy, A.H. Luistro, N.E. Montaña, and G.J.B. Cajipe

- *1982. Alginic Acid from Some Brown Seaweeds. *Kalikasan, Philippine Journal of Biology*, 11:51-56.

Le Jolis, A.

1863. Liste des algues marines de Cherbourg. *Mémoires de la Société Impériale des Sciences Naturelles de Cherbourg*, 10:5-168, VI plates.

Lemmermann, E.

1905. Die Algenflora der Sandwich-Inseln; Ergebnisse einer Reise nach dem Pacific; H. Schauinsland 1896/97. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie*, 34:607-663, plates VII, VIII.

Lemoine, Mme. Paul

1928. Un nouveau genre de Mélobésiées: *Mesophyllum*. *Bulletin de la Société Botanique de France*, 75:251-254.
 1929. Les Corallinacées de l'Archipel des Galapagos et du Golfe de Panama. *Archives du Muséum d'Histoire Naturelle* [Paris], series 6, 4:37-88, 35 figures, IV plates. [Publication date cited as 1930 by author in subsequent papers.]

Levring, T.

1941. Die Meeresalgen der Juan Fernandez-Inseln. In C. Skottsberg, editor, *The Natural History of Juan Fernandez and Easter Island*, volume 2, pages 601-670, 30 figures, plates 49-53.
 1953. The Marine Algae of Australia; I, Rhodophyta: Goniotrichales, Bangiales, and Nemalionales. *Arkiv för Botanik*, series 2, 2:457-530, 55 figures.

1955. Contributions to the Marine Algae of New Zealand, I, Rhodophyta: Goniotrachales, Bangiales, Nemaionales, and Bonnemaisoniales. *Arkiv för Botanik*, series 2, 3:407–432, 15 figures.
- Liao, L.M., and F.B. Sotto
 *1980. A Preliminary List of Marine Algae of Mactan Island and the Neighboring Islands (Cebu, Philippines). *Philippine Scientist* [University of San Carlos], 17:94–100, 1 figure.
- Liebman, F.
 1839. Bemærkninger og tillæg til den danske algeflore. *Naturhistorisk Tidsskrift*, 2:464–494, plate VI.
- Lightfoot, J.
 1777. *Flora scotica*. xli + 1151 pages, XXXV plates. London.
- Lim, J.R., and H. Porse
 *1981. Breakthrough in the Commercial Culture of *Eucheuma spinosum* in Northern Bohol, Philippines. In *Proceedings of the Xth International Seaweed Symposium* [Göteborg, 1980], pages 601–606, 3 figures.
- Link, H.F.
 1820. Epistola ad virum celeberrimum Nees ab Esenbeck . . . de algis aquaticis, in genera disponendis. In C.G. Nees, *Horae physicae berolinenses*, pages 1–8, plate I. Bonna [Bonn].
- Linnaeus, C.
 1753. *Species plantarum*. Volume 2, pages 561–1200. Holmia [Stockholm].
 1755. *Flora suecica, editio secunda*. [iv] + xxxii + 464 + [xxx] pages. Stockholmia [Stockholm].
 1758. *Systema naturae per regna tria naturae, editio decima*. Volume 1, pages 1–823. Holmia [Stockholm].
 1759. *Systema naturae per regna tria naturae, editio decima*. Volume 2, pages 824–1384. Holmia [Stockholm].
 1763. *Species plantarum, editio secunda, aucta*. Volume 2, pages 785–1684. Holmia [Stockholm].
 1767. *Systema naturae per regna tria naturae, editio duodecima*. Volume 1, part 2, pages 533–1327. Holmia [Stockholm].
 1771. *Mantissa plantarum altera Generum editionis VI. & Specierum editionis II*. Pages [i–vi] + 143–587. Holmia [Stockholm].
- Lucas, A.H.S.
 1935. The Marine Algae of Lord Howe Island. *Proceedings of the Linnean Society of New South Wales*, 60:194–232, 7 figures, plates v–ix.
- Luistro, A.H., G.J.B. Cajipe, and E.C. Laserna
 *1982. Partial Mineral Analysis of Some Philippine Seaweeds. *Kalikasan, Philippine Journal of Biology*, 11:45–50.
- Lyngbye, H.C.
 1819. *Tentamen hydrophytologiae danicae*. xxxii + 248 pages, 70 plates. Hafnia [Copenhagen].
- Magruder, W.H.
 1984. Reproduction and Life History of the Red Alga *Galaxaura oblongata* (Nemaliales, Galaxauraceae). *Journal of Phycology*, 20:402–409, 27 figures.
- Manapat, A.L.
 *1969. Alginic Acid from Some Philippine Brown Algae. *Acta Manilana* [University of Santo Tomas Research Center], series A, 3:36–45.
- Manza, A.V.
 *1939. Two New Species of Philippine *Cladophora*. *Bulletin of the National Research Council of the Philippines*, 23:109.
- Marcos-Angarayngay, Z.D.
 *1983. Marine Macro-algae of Ilocos Norte, I: Cyanophyceae and Chlorophyceae. *Ilocos Fisheries Journal*, 1(1):59–103, 32 figures.
 *1984a. Marine Macro-algae of Ilocos Norte, II: Phaeophyta and Rhodophyta. *Ilocos Fisheries Journal*, 1(2):1–66, 51 figures.
 *1984b. Species of Edible Seaweeds of Ilocos Norte. *Ilocos Fisheries Journal*, 1(2):118–133.
- Martens, G. von
 *1866 [1868]. Die Tange. In *Die Preussische Expedition nach Ost-Asien; Nach amtlichen Quellen: Botanischer Theil*, 152 pages, VIII plates. Berlin. [Title page dated 1866, but published in 1868; see F.A. Stafleu and R.S. Cowan, 1981, *Taxonomic Literature*, 3:317.]
- Martens, G. von, and C. Hering
 *1836. *Amansia jungermannioides*. *Flora*, 19:481–487, 4 figures on plate.
- Martinez, M.R.
 *1984. *A Checklist of Blue-green Algae of the Philippines*. v + 96 pages. College, Laguna, Philippines: National Institutes of Biotechnology and Applied Microbiology, University of the Philippines at Los Baños.
- Martius, C.F.P. von
 1828. *Icones plantarum cryptogamicarum*. Fascicle 1, pages 1–30, plates I–XIV. Monachium [Munich].
- May, V.
 1948. The Algal Genus *Gracilaria* in Australia. *Commonwealth of Australia, Council for Scientific and Industrial Research, Bulletin*, 235: 64 pages, 9 figures, 2 diagrams, 15 plates.
- Mazé, H., and A. Schramm
 1870–1877 [1878]. *Essai de classification des algues de la Guadeloupe*. 2^e édition. xix + iii + 283 pages. Basse-Terre. [Title page dated 1870–1877, but published in 1878; see F.A. Stafleu and R.S. Cowan, 1981, *Taxonomic Literature*, 3:392.]
- Mazoyer, G.
 1938. Les Céramiées de l'Afrique du Nord. *Bulletin de la Société de l'Histoire Naturelle de l'Afrique du Nord*, 29:317–331.
- Mazza, A.
 1907. Saggio di algologia oceanica [continued]. *Nuova Notarisia*, 18:126–152.
 *1909. Saggio di algologia oceanica [continued]. *Nuova Notarisia*, 20:6–18.
- Meneghini, G.
 1837. Conspectus algologiae Euganeae. *Comentarii di Medicina del dott. G.F. Spongia*, 4:321–355.
 1840. *Lettera del Prof. Giuseppe Meneghini al Dott. Iacob Corinaldi a Pisa*. Pisa. [Folded sheet without pagination; Bibiothèque Thuret-Bornet, Muséum National d'Histoire Naturelle, Paris.]
 1844. Algarum species novae vel minus notae. *Giornale Botanico Italiano*, Anno 1, 1(1):296–306.
 1846. *Alge italiane e dalmatiche*. Fascicle V, pages 353–384. Padua.
- Meñez, E.G.
 *1961. The Marine Algae of the Hundred Islands, Philippines. *Philippine Journal of Science*, 90:37–86, 12 plates.
- Meñez, E.G., and H.P. Calumpong
 *1981. Phycological Results of the Smithsonian Institution-Philippines Expeditions of 1978 and 1979 in Central Visayas, Philippines. In *Proceedings of the Fourth International Coral Reef Symposium* [Manila, 1981], volume 2, pages 379–384, 2 figures.
 *1982. The Genus *Caulerpa* from Central Visayas, Philippines. *Smithsonian Contributions to the Marine Sciences*, 17: iii + 21 pages, including 3 plates, 2 figures.
 *1984. *Thalassiodendron ciliatum*: an Unreported Seagrass in the Philippines. *Micronesica*, 18(2):103–108, 2 figures.
- Meñez, E.G., R.C. Phillips, and H.P. Calumpong
 *1983. Seagrasses from the Philippines. *Smithsonian Contributions to the Marine Sciences*, 21: iii + 40 pages, 26 figures.
- Merrill, E.D.
 *1918. *Species Blancoanae: A Critical Revision of the Philippine Species of Plants Described by Blanco and by Llanos*. 423 pages. Manila.
 *1926. Hugh Cuming's Letters to Sir William J. Hooker. *Philippine Journal of Science*, 30:153–185, 1 plate.
- Mertens, H.
 1815. Dawson Turner, Fuci. *Göttingische Gelehrte Anzeigen unter d. Aufsicht der Königl. Gesellschaft der Wissenschaften*, 1815(1):625–640. [Unsigned review.]
 1819. Mémoire sur plusieurs espèces de *Fucus*, nouvelles ou peu

- connues, observées dans la collection du Muséum. *Mémoires du Muséum d'Histoire Naturelle* [Paris], 5:172–190, plates 13–15.
- Montagne, C.
1836. Notice sur les plantes cryptogames récemment découvertes en France, contenant aussi l'indication précise des localités de quelques espèces les plus rares de la Flore française. *Annales des Sciences Naturelles, Botanique*, series 2, 5:280–291, plates 12, 13; 337–348; 6:28–36; 321–339, plate 18.
1837. Centurie de plantes cellulaires exotiques nouvelles. *Annales des Sciences Naturelles, Botanique*, series 2, 8:345–370.
- 1839–1842. Plantae cellulares. In P. Barker-Webb and S. Berthelot, *Histoire naturelle des Iles Canaries*, volume 3 (part 2, section 4), xv + 208 pages, 9 plates. Paris. [1839 = pages 1–16; 1840 = 17–160, plates 1–4, 6; 1841 = 161–208, i–xv, plates 5, 7, 8; 1842 = plate 9.]
1839. Florula boliviensis. In A.D. d'Orbigny, *Voyage dans l'Amérique meridionale . . . exécuté pendant les années 1826, 1827, 1828, 1829, 1830, 1831, 1832 et 1833. Tome septième, 1.^{re} et 2.^e Parties: Cryptogamie*, 119 pages, 3 plates. Paris.
1840. Seconde centurie de plantes cellulaires exotiques nouvelles, Décades I et II. *Annales des Sciences Naturelles, Botanique*, series 2, 13:193–207, plate 5, plate 6: figures 1, 3.
- 1842a. *Prodromus generum specierumque phycearum novarum, in itinere ad polum antarcticum . . . collectarum*. 16 pages. Parisii [Paris].
- 1842b. *Bostrychia*. *Dictionnaire Universel d'Histoire Naturelle* [Orbigny], 2:660–661.
- 1842c. Botanique: Plantes cellulaires. In Ramón de la Sagra, *Histoire physique, politique et naturelle de l'île de Cuba*, [volume 11], x + 549 pages. Atlas: plates I–XX. Paris.
- *1842d. Troisième centurie de plantes cellulaires exotiques nouvelles, Décades V, VI, VII et VIII. *Annales des Sciences Naturelles, Botanique*, series 2, 18:241–282, plate 7.
- 1843a. Quatrième centurie de plantes cellulaires exotiques nouvelles, Décade VII. *Annales des Sciences Naturelles, Botanique*, series 2, 20:294–306, plate 12.
- 1843b. Quatrième centurie de plantes cellulaires exotiques nouvelles, Décades VIII, IX et X. *Annales des Sciences Naturelles, Botanique*, series 2, 20:352–379, plates 15, 16.
- *1844a. Plantae cellulares quas in insulis philippinensibus a cl. Cuming collectae recensuit, observationibus non nullis descriptionibusque illustravit C. Montagne, D.M. *London Journal of Botany*, 3:658–662.
- 1844b. *Dasyopsis*. *Dictionnaire Universel d'Histoire Naturelle* [Orbigny], 4:611.
1845. Plantes cellulaires. In J.B. Hombron and H. Jacquinot, *Voyage au Pôle Sud et dans l'Océanie sur les corvettes l'Astrolabe et la Zélée . . . pendant les années 1837–1838–1839–1840, sous le commandement de M.J. Dumont-D'Urville: Botanique*, volume 1, xiv + 349 pages. Atlas: Botanique: Cryptogamie, 20 plates. Paris.
- *1846a. Algues, lichens, hépatiques et mousses. In C. Gaudichaud, *Voyage autour de monde exécuté pendant les années 1836 et 1837 sur la corvette la Bonite commandée par M. Vaillant: Botanique*, volume 1, i–xi, 1–163, 205–314. Atlas: [vi] pages, 150 plates. Paris.
- 1846b. Phyceae. In M.C. Durieu de Maisonneuve, *Exploration scientifique de l'Algérie pendant les années 1840, 1841, 1842, Sciences naturelles: Botanique*, pages 1–197, plates 1–16. Paris.
1847. Phycologie. *Dictionnaire Universel d'Histoire Naturelle* [Orbigny], 10:14–57.
1849. Sixième centurie de plantes cellulaires nouvelles, tant indigènes qu'exotiques, Décades VIII à X. *Annales des Sciences Naturelles, Botanique*, series 3, 12:285–320.
1850. Pugillus algarum yemensium, quas collegerunt annis 1847–1849, clarr. Arnaud et Vaysière. *Annales des Sciences Naturelles, Botanique*, series 3, 13:236–248.
1852. Diagnoses phycologicae, seu quibus characteribus, discriminan-
- dae sunt species lichenum algarumque nonnullae novae, in'tomo Florae chilensis octavo nondum typis mandato descriptae. *Annales des Sciences Naturelles, Botanique*, series 3, 18:302–319.
- *1856. *Sylloge generum specierumque cryptogamarum*. xxiv + 498 pages. Parisii [Paris].
- Montagne, C., and L. Millardet
1862. Botanique, cryptogamie, algues. In L. Maillard, *Notes sur l'île de Réunion (Bourbon)*, annex O, 25 pages, plates XXIV–XXVII.
- Montaño, N.E., E.C. Laserna, and G.J.B. Cajipe
- *1982. Partial Chemical Analysis of the Calcareous Red Alga *Galaxaura oblongata*. *Kalikasan, Philippine Journal of Biology*, 11:39–44, 2 figures.
- Montilla, J.R., and G.J. Blanco
- *1953. Marine Products of Minor Commercial Importance. In *Philippine Fisheries: A Handbook Prepared by the Technical Staff of the Bureau of Fisheries*, pages 157–169, 6 figures. Manila.
- Moreland, P.S.
- *1980. Edible Seaweeds of Northern Luzon, Philippines: Market Prices, Local Taste Preference, Seaweed Recipes, and Other Local Uses. *Philippine Journal of Science*, 108:41–53.
- Moris, G., and G. De Notaris
1839. Florula caprariae. *Memorie della Reale Accademia delle Scienze di Torino*, serie 2 (Classe di Scienze Fisiche e Matematiche), 2:59–300, plates I–VI.
- Moul, E.T.
- *1964. New Records of *Halimeda* and *Udotea* for the Pacific Area. *Atoll Research Bulletin*, 106: 10 pages.
- Müller, O.F.
1778. *Icones plantarum . . . Florae danicae*. Volume 5, fascicle 13, 8 pages, plates 721–780. Havnia [Copenhagen].
1782. *Icones plantarum . . . Florae danicae*. Volume 5, fascicle 15, 6 pages, plates 841–900. Havnia [Copenhagen].
- Murray, G.
1889. On *Boodlea*, a New Genus of Siphonocladaceae. *Journal of the Linnean Society of London, Botany*, 25:243–245, plate 49.
1891. On New Species of *Caulerpa*, with Observations on the Position of the Genus. *Transactions of the Linnean Society of London, Botany*, 3:207–213, plates LII(52), LIII(53).
1893. On *Halicystis* and *Valonia*. In G. Murray, editor, *Phycological Memoirs*, part II, pages 47–52, plate XIII.
- Murray, G., and L.A. Boodle
1888. On the Structure of *Spongocladia*, Aresch. (*Spongodendron*, Zanard.), with an Account of New Forms. *Annals of Botany*, 2:169–175, figures 8–11.
1889. A Systematic and Structural Account of the Genus *Avrainvillea* Decaisne, I: Systematic. *Journal of Botany*, 27:67–72.
- Nägeli, C.
1858. Die Stärkekörner. In C. Nägeli and C. Cramer, *Pflanzenphysiologische Untersuchungen*, volume 2, x + 623 pages, plates XI–XXVI. Zürich.
1862. Beiträge zur Morphologie und Systematik der Ceramiaeae. *Sitzungsberichte der Königlichen Bayerischen Akademie der Wissenschaften zu München*, 1861(2):297–415, 30 figures on plate.
- Nasr, A.H.
1939. Algae. In Reports on the Preliminary Expedition for the Exploration of the Red Sea in the R.R.S. "Mabahith" (December 1934–February 1935). *Publications of the Marine Biological Station, Ghardaqa*, 1:47–76, 17 figures, 1 plate.
1941. Some New and Little Known Algae from the Red Sea. *Revue Algologique*, 12:57–76, 16 figures, plate 2.
- Nees, C.G.
1820. *Horae physicae berolinenses*. [xii] + 123 [+ 4(index)] pages. XXVII plates. Bonna [Bonn].
- Newton, L.M.
1953. Marine Algae. In *The John Murray Expedition 1933–34: Scientific*

Reports, volume IX, pages 395–420, 4 plates.

Nizamuddin, M.

1967. *Caulerpa* from Karachi Coast—II. *Botanica Marina*, 10:158–166, including II plates, 17 figures.

Nizamuddin, M. and J. Gerloff

1980. New Species and New Combinations in the Genus *Dilophus* J. Ag. *Nova Hedwigia*, 31:865–879, including 7 plates.

Norris, R.E.

1957. Morphological Studies on the Kallymeniaceae. *University of California Publications in Botany*, 28:251–333, including plates 28–40, 25 figures.

Okamura, K.

1895. New or Little Known Algae from Japan. *Botanical Magazine* [Tokyo], 9:472–482, plate IX.

1897. On the Algae from Ogasawara-jima (Bonin Islands). *Botanical Magazine* [Tokyo], 11:1–16, figures A–D, plate I.

1899a. Contributions to the Knowledge of the Marine Algae of Japan, III. *Botanical Magazine* [Tokyo], 13:2–10, 35–43, plate I.

1899b. *Algae japonicae exsiccatae*. Fascicle I, numbers 1–50. Tokyo.

1900–1902. *Illustrations of the Marine Algae of Japan*. Volume I, 93 pages, XXX plates. Tokyo. [1900 = pages 1–14, plates I–V; 1901 = pages 15–74, plates VI–XXV; 1902 = pages 75–93, plates XXVI–XXX.]

1903. Contents of the “Algae Japonicae Exsiccatae” Fasciculus II. *Botanical Magazine* [Tokyo], 17:129–132.

1907–1909. *Icones of Japanese Algae*. Volume I, 258 pages, plates I–L. Tokyo.

1909–1912. *Icones of Japanese Algae*. Volume II, 191 pages, plates LI–C. Tokyo.

1913–1915. *Icones of Japanese Algae*. Volume III, 218 pages, plates CI–CL. Tokyo.

1916–1923. *Icones of Japanese Algae*. Volume IV, 205 pages, plates CLI–CC. Tokyo.

1916. List of Marine Algae Collected in Caroline and Mariana Islands, 1915. *Botanical Magazine* [Tokyo], 30:1–14, 9 figures, plate I.

1923–1928. *Icones of Japanese Algae*. Volume V, 203 pages, plates CCI–CCL. Tokyo.

1929–1932. *Icones of Japanese Algae*. Volume VI, 101 + 96 pages, plates CCLI–CCC. Tokyo.

1931. On the Marine Algae from Kôto-sho (Botel Tobago). *Bulletin of the Biogeographical Society of Japan*, 2:95–122, 1 figure, plates 10–12.

1932. The Distribution of Marine Algae in Pacific Waters. *Records of Oceanographic Works in Japan*, 4:30–150.

1933–1942. *Icones of Japanese Algae*. Volume VII, 116 + 70 + 41 pages, plates 301–345. Tokyo.

1934. On *Gelidium* and *Pterocladia* of Japan. *Journal of the Imperial Fisheries Institute* [Tokyo], 29:47–67, plates 16–33.

Olea, L.E., and A.I. De Leon

*1956. Analyses of Some Philippine Seaweeds. *Journal of the Philippine Pharmaceutical Association*, 43:103–104. [Abstract.]

Olivi, G.

1794. Sopra una nuova specie di *Ulva* delle Lagune Venete. *Saggi Scientifici e Letterari dell’ Accademia di Padova*, 3(1):144–154, III plates.

Olsen-Stojkovich, J.

*1985a. A Systematic Study of the Genus *Avrainvillea* Decaisne (Chlorophyta, Udoteaceae). *Nova Hedwigia*, 41:1–68, including 11 plates, 26 figures.

1985b. A Phylogenetic Look at Selected Genera in the Siphonocladales/Cladophorales Complex Using Immunological Data. In *Proceedings of the Fifth International Coral Reef Symposium, Tahiti, 27 May–1 June, 1985*, volume 5, pages 59–63, 2 figures.

Ortega, E.P., A.C. Alcalá, and A.Y. Reyes

*1974. Algal Association in *Caulerpa* Communities in Southern Negros, Philippines. *Silliman Journal*, 21(2):178–190, 10 tables.

Pallas, P.S.

1766. *Elenchus zoophytorum*. Pages i–xvi + 17–451. Haga-Comitis [The Hague].

Papenfuss, G.F.

1940. Notes on South African Marine Algae, I. *Botaniska Notiser*, 1940:200–226, 16 figures.

1943a. Notes on South African Marine Algae, II. *Journal of South African Botany*, 9:79–92.

1943b. Notes on Algal Nomenclature, II: *Gymnosorus* J. Agardh. *American Journal of Botany*, 30:463–468, 14 figures.

1944. Notes on Algal Nomenclature, III: Miscellaneous Species of Chlorophyceae, Phaeophyceae, and Rhodophyceae. *Farlowia*, 1:337–346.

1945. Review of the *Acrochaetium-Rhodochorton* Complex of the Red Algae. *University of California Publications in Botany*, 18:229–334.

1950. Review of the Genera of Algae Described by Stackhouse. *Hydrobiologia*, 2:181–208.

1952. Notes on South African Marine Algae, III. *Journal of South African Botany*, 17:167–188.

1956. Notes on South African Marine Algae, IV. *Journal of South African Botany*, 22:65–77.

1958. Notes on Algal Nomenclature, IV: Various Genera and Species of Chlorophyceae, Phaeophyceae, and Rhodophyceae. *Taxon*, 7:104–109.

1960. On the Genera of the Ulvales and the Status of the Order. *Journal of the Linnean Society of London, Botany*, 56:303–318, 21 figures in text and on 6 plates.

1964. Catalogue and Bibliography of Antarctic and Sub-antarctic Benthic Marine Algae. In M.O. Lee, editor, *Biology of the Antarctic Seas I, Antarctic Research Series* [American Geophysical Union], volume 1, pages 1–76. Washington, D.C.

*1968. The History, Morphology and Taxonomy of *Hormophysa* (Fucales: Cystoseiraceae). *Phytomorphology*, 17:42–47, 5 figures.

1977. Review of the Genera of Dictyotales (Phaeophycophyta). *Bulletin of the Japanese Society of Phycology*, 25(supplement):271–287.

1980. Proposal for the Conservation of the Brown Algal Generic Name *Pocockiella* Papenfuss against *Lobophora* J. Agardh. *Taxon*, 29:330–331.

Papenfuss, G.F., and L.E. Egerod

1957. Notes on South African Marine Chlorophyceae. *Phytomorphology*, 7:82–93.

Papenfuss, G.F., and J.B. Jensen

1967. The Morphology, Taxonomy, and Nomenclature of *Cystophylum trinode* (Forsskål) J. Agardh and *Cystoseira myrica* (S.G. Gmelin) C. Agardh (Fucales: Cystoseiraceae). *Blumea*, 15:17–24, + 4 figures.

Papenfuss, G.F., K.E. Mshigeni, and Y.M. Chiang

*1982. Revision of the Red Algal Genus *Galaxaura* with Special Reference to the Species Occurring in the Western Indian Ocean. *Botanica Marina*, 25:401–444, 46 figures.

Parker, H.S.

*1974. The Culture of the Red Algal Genus *Eucheuma* in the Philippines. *Aquaculture*, 3:425–439, 3 figures.

Parkinson, P.G.

1983. The Typification and Status of the Name *Chaetangium* (Algae). *Taxon*, 32:605–610.

Parsons, M.J.

1975. Morphology and Taxonomy of the Dasyaceae and the Lophothaliaeae (Rhodomelaceae) of the Rhodophyta. *Australian Journal of Botany*, 23:549–713, 49 figures.

Pelayo, R.T., and C.A. Lintan

*1981. The Culture of Seaweed. *Technology*, 3(3):1–20, 8 figures. [Published by the Fisheries Research Division of the Philippine

- Council for Agriculture and Resources Research, Los Baños, Laguna.]
- Phạm-Hoàng Hộ
1969. *Rong biển Vietnam: Marine Algae of South Vietnam*. [vi] + 558 pages, 67 + 224 + 88 + 119 + 2 figures. [Saigon.] [In Vietnamese.]
- Philippi, R.A.
1837. Beweis, dass die Nulliporen Pflanzen sind. *Archiv für Naturgeschichte*, 3(1):387–393, plate IX: figures 2–6.
- Piccone, A.
1884a. Contribuzioni all'algologia eritrea. *Nuovo Giornale Botanico Italiano*, 16:281–332, plates VII–IX.
1884b. *Crociera del Corsaro alle Isole Madera e Canarie del Capitano Enrico D'Albertis: Alghe*. 60 pages, 5 figures on plate. Genova [Genoa].
*1886. *Alghe del viaggio di circumnavigazione della Vettor Pisani*. 97 pages, II plates. Genova [Genoa].
*1889. Nuove alghe del viaggio di circumnavigazione della "Vettor Pisani." *Atti della Reale Accademia dei Lincei, Memorie di Classe di Scienze Fisiche, Matematiche e Naturale*, series 4, 6:10–63.
- Poiret, J.L.M.
1808. Ulve: *Ulva*. In J.B. de Lamarck, *Encyclopédie méthodique: Botanique*, volume 8, pages 160–181. Paris.
- Post, E.
*1936. Systematische und pflanzengeographische Notizen zur *Bostrychia-Caloglossa*-Assoziation. *Revue Algologique*, 9:1–84, 4 figures.
*1938. Weitere Daten zur Verbreitung des *Bostrychietum*, II. *Hedwigia*, 78:202–215.
*1939. Weitere Daten zur Verbreitung des *Bostrychietum*, III. *Archiv für Protistenkunde*, 93:6–37, plates 1, 2.
- Postels, A., and F. Ruprecht
1840. *Illustrationes algarum*. [vi] + iv + 22 pages, XL plates. Petropolis [Leningrad].
- Price, I.R.
1981. *Chlorocladus australasicus* Rediscovered. In *XIII International Botanical Congress [Sydney, 1981], Abstracts*, page 175.
- Price, J.H.
1984. Bibliographic Notes on Works Concerning the Algae, V: A Note on Aspects of the *Fuci* . . . (Dawson Turner, 1807–1819). *Archives of Natural History*, 11:440–442.
- Price, J.H., I. Tittley, and W.D. Richardson
1979. The Distribution of *Padina pavonica* (L.) Lamour. (Phaeophyta: Dictyotales) on British and Adjacent European Shores. *Bulletin of the British Museum (Natural History), Botany*, 7:1–67, including 3 plates, 2 figures.
- Prud'homme van Reine, W.F.
1982. A Taxonomic Revision of the European Sphacelariaceae (Sphacelariales, Phaeophyceae). *Leiden Botanical Series*, 6: [x] + 293 pages, including 6 plates, 660 figures.
- Puig, H., and P.A. Cordero, Jr.
*1979. Taxonomy and Distribution of the Littoral Benthic Marine Algae of Biliran Island, Leyte, with Emphasis on the Useful Species. *Journal of Graduate Research, Graduate School of the University of Santo Tomas*, 9(2):14–46.
- Quisumbing, E.
*1951. Medicinal Plants of the Philippines. *Republic of the Philippines, Department of Agriculture and Natural Resources, Technical Bulletin*, 16: 1234 pages.
*1957. Elmer Drew Merrill. *Philippine Journal of Science*, 85:181–188, portrait.
- Quoy, J.R.C., and P. Gaimard
1824. Zoologie. In L. de Freycinet, *Voyage autour du monde . . . sur les corvettes . . . l'Uranie et la Physicienne, pendant les années 1817, 1818, 1819 et 1820*, [vi] + 713 pages, 96 plates. Paris.
- Rabanal, H.R., R.S. Esguerra, J.V. Lopez, A.M. Aldana, V.R. Ramos, and S.S. Felix
*1953. The Rate of Algae (Lumut) Production in the Dagat-dagatan Salt-water Fishery Experimental Station Fishponds. *Philippine Journal of Fisheries*, 1:155–169, 5 figures.
- Rabanal, H.R., and H.R. Montalban
*1953. The Growing of Algae or "Lumut" in Baños Fishponds. In *Philippine Fisheries: A Handbook Prepared by the Technical Staff of the Bureau of Fisheries*, pages 142–152, 3 figures. Manila.
*1961. The Growing of Algae or "Lumut" in Baños Fishponds. *Fisheries Gazette*, 5:3–12.
- Rabanal, H.R., and G.C. Trono, Jr.
*1983. Seaweeds in Asia: a Resource Waiting for Development. *Indofish Marketing Digest*, 4/83:19–22, [7] photographs.
- Rabenhorst, L.
1847. *Deutschlands Kryptogamen-Flora; Zweiter Band, Zweite Abteilung: Algen*. xx + 216 pages. Leipzig.
1865. *Flora europaea algarum aquae dulcis et submarinae, Sectio II: Algae phycochromaceae complectens*. 319 pages. Lipsia [Leipzig].
- Reinbold, T.
1901. Marine Algae (Chlorophyceae, Phaeophyceae, Dictyotales, Rhodophyceae). In J. Schmidt, *Flora of Koh Chang, Part IV. Botanisk Tidsskrift*, 24:187–201, 5 figures.
1905. Einige neue Chlorophyceen aus dem Ind. Ocean (Niederl. Indien), gesammelt von A. Weber van Bosse. *Nuova Notarisa*, 16:145–149.
- Reinke, J.
1889. Algenflora der westlichen Ostsee deutschen Antheils. Eine systematisch-pflanzengeographische Studie. *Bericht der Kommission zur Wissenschaftlichen Untersuchungen der Deutschen Meere in Kiel*, 6:III–XI, 1–101, 8 figures.
- Reyes, A.Y.
*1972. A Survey of the Littoral Benthic Algae of the Coastal Areas of Dumaguete City. *Philippine Journal of Science*, 99:131–163.
*1978. The Littoral Benthic Algae of Siquijor Province, I: Cyanophyta and Chlorophyta. *Philippine Journal of Science*, 105:133–191, including 11 plates.
*1980. The Littoral Benthic Algae of Siquijor Province, II: Phaeophyta and Rhodophyta. *Philippine Journal of Science*, 107:117–173, including 13 plates.
- Ricohermoso, M.A., and L.E. Deveau
*1979. Review of Commercial Propagation of *Eucheuma* (Florideophyceae) Clones in the Philippines. In *Proceedings of the Ninth International Seaweed Symposium [Santa Barbara, 1977]*, pages 525–531, 2 figures.
- Rippka, R., J. Deruelles, J.B. Waterbury, M. Herdman, and R.Y. Stanier
1979. Generic Assignments, Strain Histories and Properties of Pure Cultures of Cyanobacteria. *Journal of General Microbiology*, 111:1–61, 99 figures.
- Rivera, J.G.
*1974. A Study of the Chemical Composition of Some Seaweeds around Cebu. *Philippine Scientist [University of San Carlos]*, 11:108. [Abstract.]
- Rosenvinge, L.K.
1909. The Marine Algae of Denmark, Contributions to Their Natural History, Part I: Introduction, Rhodophyceae I: (Bangiales and Nemalionales). *Kongelige Danske Videnskabernes Selskabs Skrifter*, 7. Række, Naturvidenskabelig og Mathematisk Afdeling, 7:1–151, figures 1–73, plates I, II.
1931. The Marine Algae of Denmark, Contributions to Their Natural History, Part IV: Rhodophyceae IV: (Gigartinales, Rhodymeniales, Nemastomatales). *Kongelige Danske Videnskabernes Selskabs Skrifter*, 7. Række, Naturvidenskabelig og Mathematisk Afdeling, 7:489–628, figures 454–619, plate VIII.

- Rosenvinge, L.K., and S. Lund
1941. The Marine Algae of Denmark, Contributions to Their Natural History, Vol. II, Phaeophyceae I: Ectocarpaceae and Acinetosporaceae. *Kongelige Danske Videnskabskabernes Selskab, Biologiske Skrifter*, 1(4): 79 pages, 38 figures.
- Roth, A.W.
1797. *Catalecta botanica*. Fascicle 1, viii + 244 + [10] pages, VIII plates. Lipsia [Leipzig].
1800a. *Tentamen florae germanicae*. Volume III, part 1, viii + 578 pages. Lipsia [Leipzig].
1800b. *Catalecta botanica*. Fascicle 2, [10] + 258 + [12] pages, 9 plates. Lipsia [Leipzig].
1806. *Catalecta botanica*. Fascicle 3, [8] + 350 + [9] pages, XII plates. Lipsia [Leipzig].
- Rothpletz, A.
1893. Ueber eine neue Pflanze (*Lithothamnium erythraeum* n. sp.) des Rothen Meeres. *Botanisches Centralblatt*, 54:5–6.
- Roussel, H.
1806. *Flore du Calvados*. II^e édition. 371 pages. Caen.
- Saito, Y.
*1968. [The Genus *Laurencia* from the Hawaiian Islands, Philippines and Adjacent Areas.] *Bulletin of the Japanese Society of Phycology*, 16:82–94, 2 figures. [In Japanese.]
*1969. The Algal Genus *Laurencia* from the Hawaiian Islands, the Philippine Islands and Adjacent Areas. *Pacific Science*, 23:148–160, 11 figures.
- Saito, Y., and H.B.S. Womersley
1974. The Southern Australian Species of *Laurencia* (Ceramiales: Rhodophyta). *Australian Journal of Botany*, 22:815–874, 27 figures.
- Saratan, C.S.
*1981. *Gracilaria* Culture at Bacoor Bay, Philippines. In G.C. Trono, Jr. and E.T. Ganzon-Fortes, editors, *Report on the Training Course on Gracilaria Algae*, pages 171–175. Manila. [United Nations, Food and Agriculture Organization, South China Sea Fisheries Development and Coordinating Programme, Work Plan Implementation (General), SCS/GEN/81/29.]
- Saraya, A., and G.C. Trono, Jr.
*1980. The Marine Benthic Algae of Santiago Island and Adjacent Areas in Bolinao, Pangasinan, I: Cyanophyta, Chlorophyta and Phaeophyta. *Natural and Applied Science Bulletin* [University of the Philippines], 31:1–59, including X plates.
*1982. The Marine Benthic Algae of Santiago Island and Adjacent Areas in Bolinao, Pangasinan, II: Rhodophyta. *Natural and Applied Science Bulletin* [University of the Philippines], 34:25–34, 34a, 34b, 35–83, including XI plates.
- Schmidle, W.
1901. Algen aus Istrien, Dalmatien, Montenegro, Hercegovina und Bosnien. *Allgemeine Botanische Zeitschrift*, 7:99–102, 125–127, [2] figures.
- Schmidt, O.C.
*1923. Beiträge zur Kenntnis der Gattung *Codium* Stackh. *Bibliotheca Botanica*, 23(91): [iv] + 68 pages, 44 figures.
1924. Meeresalgen der Sammlung v. Luetzelburg aus Brasilien. *Hedwigia*, 65:85–100, 6 figures.
- Schmitz, F.
1893. Die Gattung *Lophothalia* J. Ag. *Berichte der Deutschen Botanischen Gesellschaft*, 11:212–232.
1895. Marine Florideen von Deutsch-Ostafrika. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie*, 21:137–177.
- Schmitz, F., and P. Hauptfleisch
*1896–1897. Rhodophyceae. In A. Engler and K. Prantl, editors, *Die natürlichen Pflanzenfamilien*, volume 1 (part 2), pages 298–544, figures 192–288. Leipzig. [1896 = pages 298–384, figures 192–227; 1897 = pages 385–544, figures 228–288. Individual families are under the authorship of Schmitz, Schmitz and Falkenberg, or Schmitz and Hauptfleisch.]
- Schnetter, R., and G.B. Meyer
1982. Marine Algen der Pazifikküste von Kolombien: Chlorophyceae, Phaeophyceae, Rhodophyceae; Algas marinas del litoral pacífico de Colombia: Chlorophyceae, Phaeophyceae, Rhodophyceae. *Bibliotheca Phycologica*, 60: xvii + 287 pages, including XXXVII plates, 1 figure.
- Schramm, A., and H. Mazé
1865. *Essai de classification des algues de la Guadeloupe*. ii + 52 pages. Basse Terre.
- Scopoli, J.A.
1771. *Flora carniolica, editio secunda*. Volume II, 496 pages, 66 plates [1–22, 22*, 23–65]. Vindobona [Vienna].
- Seale, A.
*1911. The Fishery Resources of the Philippine Islands, Part IV: Miscellaneous Marine Products. *Philippine Journal of Science*, 6d:283–320, 12 plates.
- Segawa, S.
1935. On the Marine Algae of Susaki, Prov. Idzu, and Its Vicinity. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 1:59–90, 5 figures, plates 19, 20.
1938. On the Marine Algae of Susaki, Prov. Izu, and Its Vicinity, III. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 2:131–153, 11 figures, plates 32–36.
1941. New or Noteworthy Algae from Izu. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 2:251–271, 13 figures, plates 55–58.
- Setchell, W.A.
1914. The *Scinaia* Assemblage. *University of California Publications in Botany*, 6:79–152, plates 10–16.
1924. American Samoa, Part I: Vegetation of Tutuila Island; Part II: Ethnobotany of the Samoans; Part III: Vegetation of Rose Atoll. *Carnegie Institution of Washington, Publications*, 341: vi + 275 pages, 57 figures, 37 plates.
1925. Notes on *Microdictyon*. *University of California Publications in Botany*, 13:101–107.
1926. Tahitian Algae Collected by W.A. Setchell, C.B. Setchell, and H.E. Parks. *University of California Publications in Botany*, 12:61–142, including plates 7–22.
1935. The Templeton Crocker Expedition to Western Polynesian and Melanesian Islands, 1933, No. 21: Some Marine Plants of South-eastern Melanesia. *Proceedings of the California Academy of Sciences*, series 4, 21:259–275, including plates 11–15.
1943. *Mastophora* and the Mastophoreae: Genus and Subfamily of Corallinaceae. *Proceedings of the National Academy of Sciences of the United States of America*, 29:127–135.
- Setchell, W.A., and N.L. Gardner
1922. Phycological Contributions II to VI. *University of California Publications in Botany*, 7:333–426, plates 32–49.
1924a. Expedition of the California Academy of Sciences to the Gulf of California in 1921: The Marine Algae. *Proceedings of the California Academy of Sciences*, series 4, 12:695–949, including plates 12–88.
1924b. Phycological Contributions, VII. *University of California Publications in Botany*, 13:1–13.
1930. Marine Algae of the Revillagigedo Islands Expedition in 1925. *Proceedings of the California Academy of Sciences*, series 4, 19:109–215, plates 4–15.
1937. The Templeton Crocker Expedition of the California Academy of Sciences, 1932, No. 31: A Preliminary Report on the Algae.

- Proceedings of the California Academy of Sciences*, series 4, 22:65–98, 1 figure, plates 3–25.
- Setchell, W.A., and L.R. Mason
1943. *Goniolithon* and *Neogoniolithon*: Two Genera of Crustaceous Coralline Algae. *Proceedings of the National Academy of Sciences of the United States of America*, 29:87–92.
- Shameel, M.
1978. Additions to the Knowledge about *Caulerpa* Lamouroux (Bryopsidophyceae) from the Coast of Karachi. *Botanica Marina*, 21:277–282, 4 figures.
- Silva, P.C.
1952a. A Review of Nomenclatural Conservation in the Algae from the Point of View of the Type Method. *University of California Publications in Botany*, 25:241–323.
*1952b. *Codium* Stackhouse. In L.E. Egerod, An Analysis of the Siphonous Chlorophycophyta with Special Reference to the Siphonocladales, Siphonales, and Dasycladales of Hawaii. *University of California Publications in Botany*, 25:381–395, figures 11–18, plates 34b, 35, 36.
1955. The Dichotomous Species of *Codium* in Britain. *Journal of the Marine Biological Association of the United Kingdom*, 34:565–577, 5 figures, 1 plate.
1957. Remarks on Algal Nomenclature. *Taxon*, 6:141–145.
1959. The Genus *Codium* (Chlorophyta) in South Africa. *Journal of South African Botany*, 25:103–165, 22 figures, XVI plates.
1960. *Codium* (Chlorophyta) in the Tropical Western Atlantic. *Nova Hedwigia*, 1:497–536, plates 107–123.
1972. Remarks on Algal Nomenclature, V. *Taxon*, 21:199–205.
1980. Remarks on Algal Nomenclature, VI. *Taxon*, 29:121–145.
1982. Chlorophyceae. In S.P. Parker, editor, *Synopsis and Classification of Living Organisms*, volume 1, pages 133–161. New York: McGraw-Hill.
- Silva, P.C., and H.B.S. Womersley
1956. The Genus *Codium* (Chlorophyta) in Southern Australia. *Australian Journal of Botany*, 4:261–289, 16 figures, 3 plates.
- Skuja, H.
1949. Zur Süßwasseralgenflora Burmas. *Nova Acta Regiae Societatis Scientiarum Upsaliensis*, series 4, 14(5): 188 pages, XXXVII plates.
- Smith, I.R., and R. Pestaño-Smith
*1980. A Fishing Community's Response to Seaweed Farming. *ICLARM* [International Center for Living Aquatic Resources Management] *Newsletter*, 3(3):6–8, illustrated.
- Smith, J.E.
1809–1810. *English Botany*. Volume 30, plates 2089–2160. London. [1809 = plates 2089–2098; 1810 = 2099–2160.]
1811–1812. *English Botany*. Volume 33, plates 2305–2376. London. [1811 = plates 2305–2362; 1812 = 2363–2376.]
- Solier, A.J.J.
1846. Sur deux algues zoosporées formant le nouveau genre *Derbesia*. *Revue Botanique* [Duchartre], 1:452–454.
- Solms-Laubach, H.
1892. Ueber die Algengenera *Cymopolia*, *Neomeris* und *Bornetella*. *Annales du Jardin Botanique de Buitenzorg*, 11:61–97, plates VIII, IX.
*1895. Monograph of the Acetabularieae. *Transactions of the Linnean Society of London, Botany*, 5:1–39, plates 1–4.
- Sonder, O.G.
1845. Nova algarum genera et species, quas in itinere ad oras occidentales Novae Hollandiae, collegit L. Preiss, Ph.Dr. *Botanische Zeitung*, 3:49–57.
1846–1848. Algae L. Agardh. In C. Lehmann, *Plantae preissianae* . . . quas in Australasia occidentali et meridionali-occidentali annis 1838–1841 collegit Ludovicus Preiss, volume 2, pages 148–160 (= 1846); 161–195 (= 1848). Hamburgum [Hamburg].
1853. *Plantae muellerianae*: Algae. *Linnaea*, 25:657–703.
1855. [Plantae muellerianae:] Algae annis 1852 et 1853 collectae. *Linnaea*, 26:506–528.
- *1871. Die Algen des tropischen Australiens. *Naturwissenschaftlichen Verein in Hamburg, Abhandlungen aus dem Gebiete der Naturwissenschaften*, 5:33–74, plates I–VI.
- *1879. Algae roscherianae. In Baron Carl Claus von der Decken's Reisen in Ost-Afrika in den Jahren 1859–1865; Wissenschaftlicher Theil, Dritter Band, Dritte Abtheilung: Botanik, pages 79–85, plate 1. Leipzig and Heidelberg.
1880. Supplementum ad volumen undecimum Fragmentorum phytophographiae Australiae, indices plantarum acotyledonarum complectens, I: Algae australianae. In F. von Mueller, *Fragmenta phytographiae Australiae*, volume 11 (Supplement), pages 1–42. Melbourne.
- Sotto, F.
*1978. The Culture of *Caulerpa racemosa* in Kalawisan, Mactan Island, Cebu, Philippines: a Potential for the Seaweed Industry. *Philippine Scientist* [University of San Carlos], 15:109–111.
- Sprengel, K.
1827. *Caroli Linnaei . . . Systema vegetabilium, editio decima sexta, Volumen IV, Pars I, Classis 24*. [iv] + 592 pages. Gottinga [Göttingen].
- Stackhouse, J.
1795–1801. *Nereis britannica*. xl + 112 pages, xvii plates. Bathonia [Bath]. [1795 = Fascicle 1, pages i–viii + 1–30, plates i–viii; 1797 = Fascicle 2, pages ix–xxiv + 31–70, plates ix–xii; 1801 = Fascicle 3, pages xxv–xl + 71–112, plates xiii–xvii.]
1809. Tentamen marino-cryptogamicum, ordinem novum, in genera et species distributum, in Classe XXIVta Linnaei sistens. *Mémoires de la Société Impériale des Naturalistes de Moscou*, 2:50–97.
- Stafleu, F.A.
1967. Taxonomic Literature. *Regnum Vegetabile*, 52: xx + 556 pages.
- Stegenga, H.
1985. The Marine Acrochaetiaceae (Rhodophyta) of Southern Africa. *South African Journal of Botany*, 51:291–330, 25 figures.
- Stegenga, H., and A.S. Mulder
1979. Remarks on the *Audouinella microscopica* (Nägeli) Woelkerling Complex, with a Brief Survey of the Genus *Chromastrum* Papenfuss (Rhodophyta, Nemaliales). *Acta Botanica Neerlandica*, 28:289–311, 41 figures.
- Stewart, J.G., and J.N. Norris
1981. Gelidiaceae (Rhodophyta) from the Northern Gulf of California, Mexico. *Phycologia*, 20:273–284, 15 figures.
- Stockmayer, S.
1890. Ueber die Algengattung *Rhizoclonium*. *Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien*, 40(Abhandlungen):571–586, 27 figures.
- Suhr, J.N. von
1834. Uebersicht der Algen, welche von Hrn. Ecklon an der südafrikanischen Küste gefunden worden sind. *Flora*, 17:721–735, 737–743, plates I, II.
1840. Beiträge zur Algenkunde. *Flora*, 23:257–265, 273–282, 289–298.
- Sulit, J.I., O.B. Navarro, and R.C. San Juan
*1952. Chemical Studies and Utilization of Some Philippine Seaweeds. In *Proceedings of the Indo-Pacific Fisheries Council, 4th Meeting* [Quezon City, Philippines]. Section II, pages 165–170.
- Sulit, J.I., L.G. Salcedo, and P.G. Panganiban
*1956. Studies on the Bleaching and Utilization of the Seaweed "Gulamang-dagat" (*Gracilaria confervoides*). In *Proceedings of the Indo-Pacific Fisheries Council, 6th Session, Tokyo, Japan, 30 September–14 October 1955*. Sections II and III, pages 280–283.

- *1973. Studies on the Bleaching and Utilization of the Seaweed "Gulamang-dagat" (*Gracilaria confervoides*). *Philippine Journal of Fisheries*, 8:177-182.
- Sulit, J.I., and R.C. San Juan
- *1955. Studies on the Extraction of Alginic Acid from Some Species of Philippine *Sargassum*. *Philippine Journal of Fisheries*, 3:47-53, 3 plates.
- Suringar, W.F.R.
1867. *Algarum iaponicarum Musei botanici L. B. index praecursorius. Annales Musei Botanici Lugduno-Batavi*, 3:256-259.
- Svedelius, N.
1906. Reports on the Marine Algae of Ceylon, I: Ecological and Systematic Studies of the Ceylon Species of *Caulerpa*. *Reports of the Ceylon Marine Biological Laboratory*, 2:81-144, 51 figures.
1945. Critical Notes on Some Species of *Galaxaura* from Ceylon. *Arkiv för Botanik*, 32A(6): 74 pages, 22 figures, IX plates.
- Swartz, O.
1788. *Nova genera & species plantarum*. x + 152 pages. Holmia [Stockholm], Upsalia [Uppsala], and Aboa [Turku].
- Tahil, A.S.
- *1978. Experiments in Rearing *Siganus guttatus* (Pisces: Osteichthyes, Siganidae) in a Sea-cage and Fishpen in the Philippines. *Philippine Scientist* [University of San Carlos], 15:50-66, 6 figures.
- Tanaka, T.
1935. Four New Species of *Galaxaura* from Japan. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 1:51-57, 6 figures, plates 17, 18.
1941. The Genus *Hypnea* from Japan. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 2:227-250, 21 figures, plates 53, 54.
1944. The Japanese Species of Protofloridae. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 3:79-97, 16 figures.
1952. The Systematic Study of the Japanese Protofloridae. *Memoirs of the Faculty of Fisheries, Kagoshima University*, 2(2): 92 pages, 41 figures, 23 plates.
- *1967. Some Marine Algae from Batan and Camiguin Islands, Northern Philippines, I. *Memoirs of the Faculty of Fisheries, Kagoshima University*, 16:13-27, including II plates, 10 figures.
- Taylor, W.R.
1928. The Marine Algae of Florida with Special Reference to the Dry Tortugas. *Carnegie Institution of Washington, Publications*, 379: [v] + 220 pages, 3 figures, 37 plates.
1942. Caribbean Marine Algae of the Allan Hancock Expedition, 1939. *Allan Hancock Atlantic Expedition Reports*, 2: 193 pages, including 20 plates.
1945. Pacific Marine Algae of the Allan Hancock Expeditions to the Galapagos Islands. *Allan Hancock Pacific Expeditions*, 12: iv + 528 pages, including 100 plates, 3 figures.
1950. *Plants of Bikini and Other Northern Marshall Islands*. xv + 227 pages, 79 plates. Ann Arbor: University of Michigan Press.
1955. Notes on Algae from the Tropical Atlantic Ocean, IV. *Papers of the Michigan Academy of Science, Arts and Letters*, 40:67-78, plates I-V.
1960. *Marine Algae of the Eastern Tropical and Subtropical Coasts of the Americas*. xi + 870 pages, including 80 plates, 14 figures. Ann Arbor: University of Michigan Press.
- *1961. *Cladophoropsis philippinensis*, a New Species from the Western Pacific Ocean. *Botanica Marina*, 3:56-59, 6 figures.
- *1962. Two Undescribed Species of *Halimeda*. *Bulletin of the Torrey Botanical Club*, 89:172-177, 14 figures.
- *1964. The Genus *Turbinaria* in Eastern Seas. *Journal of the Linnean Society of London, Botany*, 58:475-490, including 3 plates, 8 figures.
- *1966a. Notes on Indo-Pacific Turbinarias. *Hydrobiologia*, 28:91-100, including 1 plate, 19 figures.
- *1966b. Records of Asian and Western Pacific Marine Algae, Particularly Algae from Indonesia and the Philippines. *Pacific Science*, 20:342-359, 2 figures.
- *1973. A New *Halimeda* (Chlorophyceae, Codiaceae) from the Philippines. *Pacific Science*, 27:34-36, 2 figures.
- *1975. A Noteworthy Variant *Caulerpa*. *Contributions from the University of Michigan Herbarium*, 11:77-79, 1 figure.
- *1977a. Notes on Plants of the Genus *Caulerpa* in the Herbarium of Maxwell S. Doty at the University of Hawaii. *Atoll Research Bulletin*, 208: 17 pages.
- *1977b. Marine Algae of the Te Vega 1965 Expedition in the Western Pacific Ocean. *Atoll Research Bulletin*, 209: 16 pages.
- Taylor, W.R., A.B. Joly, and A.J. Bernatowicz
1953. The Relation of *Dichotomosiphon pusillus* to the Algal Genus *Boodileopsis*. *Papers of the Michigan Academy of Science, Arts and Letters*, 38:97-108, plates I-III.
- Thuret, G.
1875. Essai de classification des Nostochinées. *Annales des Sciences Naturelles, Botanique*, series 6, 1:372-382.
- Tilden, J.E.
1909. *American Algae*. Century VII, Fascicle 1, numbers 601-650. Minneapolis. [Exsiccatae.]
- Trevisan, V.B.A.
1845. *Nomenclator algarum*. 80 pages. Padoue [Padua].
- Trono, G.C., Jr.
- *1972a. Annotated Checklist of Some Marine Benthic Algae from Tawi-Tawi, Sulu Archipelago. *Natural and Applied Science Bulletin* [University of the Philippines], 24:85-112.
- 1972b. Some New Species of Marine Benthic Algae from the Caroline Islands, Western-Central Pacific. *Micronesica*, 7:45-77, including 10 plates.
- *1973a. Notes on Some Marine Benthic Algae in the Philippines. *Kalikasan, Philippine Journal of Biology*, 1:126-147, 22 figures.
- *1973b. The Marine Benthic Algae of Siasi Island and Vicinity, I: Introduction and Chlorophyta. *Kalikasan, Philippine Journal of Biology*, 1:207-228.
- *1973c. Studies on the Marine Benthic Chlorophyta of Puerto Galera, Oriental Mindoro, Philippines. *University of the Philippines Natural Science Research Center, Technical Report*, 1: 26 pages + 24 figures.
- *1973d. Preliminary Taxonomic Studies on the *Caulerpa*- and *Eucheuma*-associated Species of Marine Benthic Algae in the Philippines. *University of the Philippines Natural Science Research Center, Technical Report*, 3: [ii] + 27 pages, 12 plates [= 32 + 15 figures].
- *1973e. Seaweeds: One of the Important Marine Natural Resources of the Philippines. In *Challenge to the Biologists in the 70's: the Escalation of Food Production*, pages 28-45 [discussion, pages 46-50]. Manila: National Research Council of the Philippines.
- *1974a. The Marine Benthic Algae of Siasi Island and Vicinity, II: Phaeophyta. *Kalikasan, Philippine Journal of Biology*, 2:140-148.
- *1974b. The Marine Benthic Algae of Siasi Island and Vicinity, III: Rhodophyta. *Kalikasan, Philippine Journal of Biology*, 3:83-97.
- *1974c. *Eucheuma* Seaweed Farming in the Philippines. *Philippine Agriculturist*, 57:327-334.
- *1974d. *Eucheuma Farming in the Philippines*. 13 pages. Quezon City: University of the Philippines Natural Science Research Center.
- *1974e. Seaweed Culture. In *Proceedings of the Ninth BIOTA* [Biology Teachers Association of the Philippines] *Annual Convention*, 1974, pages 12-20.
- *1975. The Marine Benthic Algae of Bulusan and Vicinity, Province of Sorsogon, I: Introduction and Chlorophyta. *Kalikasan, Philippine Journal of Biology*, 4:23-41.

- *1976. The Marine Benthic Algae of Bulusan and Vicinity, Province of Sorsogon, II: Phaeophyta. *Kalikasan, Philippine Journal of Biology*, 5:213–220.
- *1978. Notes on Some Marine Benthic Algae of Sta. Cruz, Marinduque, Philippines. *University of the Philippines Natural Science Research Center, Technical Report*, 54: 24 pages.
- *1981a. Pond Culture of Seaweeds. In G.C. Trono, Jr. and E.T. Ganzon-Fortes, editors, *Report on the Training Course on Gracilaria Algae*, pages 47–50. Manila. [United Nations, Food and Agriculture Organization, South China Sea Fisheries Development and Coordinating Programme, Work Plan Implementation (General), SCS/GEN/81/29.]
- *1981b. Field Culture of *Gracilaria* and Other Species. In G.C. Trono, Jr. and E.T. Ganzon-Fortes, editors, *Report on the Training Course on Gracilaria Algae*, pages 51–55. Manila. [United Nations, Food and Agriculture Organization, South China Sea Fisheries Development and Coordinating Programme, Work Plan Implementation (General), SCS/GEN/81/29.]
- Trono, G.C., Jr., and P. Ang, Jr.
 *1982. Marine Benthic Algae from Bugsuk Island and Vicinity, Palawan, Philippines. *Kalikasan, Philippine Journal of Biology*, 11:1–26, 4 figures.
- Trono, G.C., Jr., and R. Azanza-Corrales
 *1979. The Taxonomy and Reproductive Morphology of the *Gracilaria* Species in Manila Bay, Philippines. *International Symposium on "Marine Algae of the Indian Ocean Region" 9–12 January 1979* [Bhavnagar, India], *Abstracts*, page 26.
- *1981. The Seasonal Variation in the Biomass and Reproductive States of *Gracilaria* in Manila Bay. In *Proceedings of the Xth International Seaweed Symposium* [Göteborg, 1980], pages 743–748, 2 figures.
- Trono, G.C., Jr., R. Azanza-Corrales, and D. Manuel
 *1983. The Genus *Gracilaria* (Gigartinales, Rhodophyta) in the Philippines. *Kalikasan, Philippine Journal of Biology*, 12:15–41, 11 figures.
- Trono, G.C., Jr., and R.T. Biña
 *1973. Notes on Some Macrobenthic Red Algae of Puerto Galera, Oriental Mindoro. *University of the Philippines Natural Science Research Center, Technical Report*, 5: 16 pages.
- Trono, G.C., Jr., and A.V. De Lara
 *1981. Some Marine Benthic Algae from Cabra and Lubang Islands, Occidental Mindoro, Philippines. *Natural and Applied Science Bulletin* [University of the Philippines], 33:1–49, including XII plates.
- Trono, G.C., Jr., and E.G. Fortes
 *1980. Economically Important Seaweed Species in the Philippines. In S.Y. De Leon, R.M. Guirriec, and L.N. Panlasiqui, editors, *Alternate Foods for the Growing Population*, table 3-3 on pages 63–75. Metro Manila: National Bookstore.
- *1982. Appendix One: List of Economically Important Seaweed Species in the Philippines. In J.R. Lim, *Farming the Ocean, the GENU Story*, pages 144–156. Manila: Historical Conservation Society, R.P. Garcia Publishing Company.
- Trono, G.C., Jr., and E. Ganzon-Fortes
 *1980. An Illustrated Seaweed Flora of Calatagan, Batangas, Philippines. [iv] + III + 114 pages + errata, illustrated. Manila: Filipinas Foundation.
- *1981. [Editors.] *Report on the Training Course on Gracilaria Algae*. vii + 187 pages + annexes. Manila. [United Nations, Food and Agriculture Organization, South China Sea Fisheries Development and Coordinating Programme, Work Plan Implementation (General), SCS/GEN/81/29.]
- *1984. Seaweed Farming. *Philippine Fisheries Annual*, 1983:70–75.
- *1985. The Economic Potentials of Seaweeds. *Philippine Fisheries Annual*, 1985:62–68, [7] figures.
- Trono, G.C., Jr., and A.E. Santiago
 *1970. Genus *Galaxaura* from Puerto Galera, Oriental Mindoro, Philippines. *Natural and Applied Science Bulletin* [University of the Philippines], 22:71–85, including IV plates.
- *1972. New Records of the Genus *Acetabularia* in the Philippines. *Natural and Applied Science Bulletin* [University of the Philippines], 23:39–46.
- Trono, G.C., Jr., A.E. Santiago, and E. Ganzon-Fortes
 *1978. Notes on the Genus *Acetabularia* (Chlorophyta) in the Philippines. *Kalikasan, Philippine Journal of Biology*, 7:77–90, 5 figures.
- Trono, G.C., Jr., and M.Q. Santos-Maranan
 *1974a. The Genus *Ectocarpus* of Puerto Galera, Or. Mindoro, Philippines. *University of the Philippines Natural Science Research Center, Technical Report*, 10: 4 pages + 3 figures.
- *1974b. Notes on Four Species of Macrobenthic Phaeophyta of Puerto Galera, Oriental Mindoro, Philippines. *University of the Philippines Natural Science Research Center, Technical Report*, 11: 7 pages + 6 figures.
- Trono, G.C., Jr., and A. Tuason
 *1978. Notes on Some Marine Benthic Algae from Bakawan and Sula Islands, Province of Catanduanes, Philippines. *University of the Philippines Natural Science Research Center, Technical Report*, 53: 19 pages.
- Trono, G.C., Jr., G.T. Velasquez, and G. Guevarra
 *1980. Seaweeds and Other Marine Products. In S.Y. De Leon, R.M. Guirriec, and L.N. Panlasiqui, editors, *Alternate Foods for the Growing Population*, pages 50–89, 5 figures. Metro Manila: National Bookstore.
- Trono, G.C., Jr., and A.L. Young
 *1977. Notes on the Marine Benthic Algae of Minabalay Island, Province of Catanduanes, Philippines. *Fisheries Research Journal of the Philippines*, 2(2):54–61.
- Tseng, C.K.
 1936. Studies on the Marine Chlorophyceae from Hainan. *Chinese Marine Biological Bulletin*, 1:129–200, 34 figures, I plate.
1941. Studies on the Chinese Species of *Liagora*. *Bulletin of the Fan Memorial Institute of Biology, Botany*, 10:265–282, 10 figures.
1943. Marine Algae of Hong Kong. IV: The Genus *Laurencia*. *Papers of the Michigan Academy of Science, Arts and Letters*, 28:185–208, plates I–IV.
- Tseng, C.K., and W.J. Gilbert
 *1942. On New Algae of the Genus *Codium* from the South China Sea. *Journal of the Washington Academy of Sciences*, 32:291–296, 3 figures.
- Tungpalan, A.Y.
 *1984. Ethnobotanical Study of the Seaweeds of Ilocos Norte. *Ilocos Fisheries Journal*, 1(2):134–146, 1 figure.
- Turner, D.
 1802. *A Synopsis of the British Fuci*. xlv + 400 pages. Yarmouth.
1806. Account of a New Interesting Species of *Fucus*. *Annals of Botany* [Konig and Sims], 2:376–378, plate 13.
1808. *Fuci*. Volume I, 164 pages, plates 1–71. London.
1809. *Fuci*. Volume II, 162 pages, plates 72–134. London.
1811. *Fuci*. Volume III, 148 pages, plates 135–196. London.
- 1815–1819. *Fuci*. Volume IV, 153 pages, plates 197–258. London. [Issued in parts, beginning at least as early as 1815.]
- Turra, A.
 1780. *Florae italicae prodromus*. 68 pages. Vicetia [Vicenza].
- Uyenco [Uyengco], F.R., L.S. Sanieel, and G.S. Jacinto
 *1981a. The "Ice-Ice" Problem in Seaweed Farming. In G.C. Trono, Jr. and E.T. Ganzon-Fortes, editors, *Report on the Training Course on Gracilaria Algae*, pages 69–75, 2 figures. Manila. [United Nations, Food and Agriculture Organization, South China Sea

- Fisheries Development and Coordinating Programme, Work Plan Implementation (General), SCS/GEN/81/29.]
- *1981b. The "Ice-Ice" Problem in Seaweed Farming. In *Proceedings of the Xth International Seaweed Symposium* [Göteborg, 1980], pages 625–630, 2 figures.
- Vahl, M.
1802. Endeel kryptogamiske planter fra St.-Croix. *Skrifter af Naturhistorie-Selskabet* [Kiøbenhavn], 5(2):29–47.
- Valet, G.
1966. Les *Dictyosphaeria* du groupe *versluysii* (Siphonocladales, Valoniacees). *Phycologia*, 5:256–260, 2 figures.
- *1969. Contribution à l'étude des Dasycladales, 2: Cytologie et reproduction; 3: Révision systématique. *Nova Hedwigia*, 17:551–644, plates 133–162.
- van den Hoek, C. See Hoek, C. van den.
- Velasquez, G.T.
*1940. Filamentous Myxophyceae of the Philippines, I. *University of the Philippines, Natural and Applied Science Bulletin*, 7:269–271.
- *1941. Filamentous Myxophyceae of the Philippines, II: Family Oscillatoriaceae. *University of the Philippines, Natural and Applied Science Bulletin*, 8:189–200.
- *1949. Survey of the Algae and Economic Algal Resources of the Philippines. *Yearbook of the American Philosophical Society*, 1948:154–155.
- *1950. Studies on the Myxophyceae of Puerto Galera and Vicinity. *Natural and Applied Science Bulletin* [University of the Philippines], 10:309–328.
- *1953a. Seaweed Resources of the Philippines. In *Proceedings of the First International Seaweed Symposium* [Edinburgh, 1952], pages 100–101.
- *1953b. Studies on the Marine Algae of the Philippines. In *Abstracts of the Eighth Pacific Science Congress* [Quezon City, 1953], pages 205–206.
- *1955. The Ecological Distribution of the Myxophycean Algae of Eastern Palawan and Sulu Archipelago. *Natural and Applied Science Bulletin* [University of the Philippines], 15:153–184, V plates.
- *1957. Studies on the Marine Algae of the Philippines. In *Proceedings of the Eighth Pacific Science Congress* [Quezon City, 1957], volume 4, pages 556–562.
- *1962a. The Blue-green Algae of the Philippines. *Philippine Journal of Science*, 91:267–380, 13 plates.
- *1962b. On the State of Phycological Knowledge in the Philippines. In *Proceedings of the Ninth Pacific Science Congress* [Bangkok, 1957], volume 4, pages 234–238.
- *1968a. Ten Edible Seaweeds of the Philippines. *Philippine Biota*, 2:118–123, 10 figures.
- *1968b. A Biological Approach to the National Food Sufficiency of the Philippines. *The Biologist*, 50:142–147.
- *1971. Some Philippine Marine Algae. In *Plants of the Philippines*, pages 419–455, 39 figures. Quezon City: University of the Philippines Press.
- *1972. Studies and Utilization of the Philippine Marine Algae. In *Proceedings of the Seventh International Seaweed Symposium* [Sapporo, 1971], pages 62–65, 2 figures.
- *1979a. Microscopic Algae and Secondary Fish Production in the Coral Reef Communities. In *International Symposium on "Marine Algae of the Indian Ocean Region" 9–12 January 1979* [Bhavnagar, India], *Abstracts*, page 64.
- *1979b. Seaweeds Utilization in the Philippines. In M.J. Dunbar, editor, *Marine Production Mechanisms*, pages 229–232. Cambridge University Press. [International Biological Programme 20.]
- *1980. The "Microscopic Algae in the Hard Coral Communities". *Philippine Journal of Science*, 108:[119, 120], 121–135, 4 figures.
- *1985. History of Phycology in the Philippines, Part I. *Philippine Journal of Science*, 114:247–250.
- Velasquez, G.T., D.F. Cornejo, A.E. Santiago, and L. Baens-Arcega
*1973. Algal Communities of Exposed and Protected Marine Waters of Batangas and Bataan. *Philippine Journal of Science*, 100:1–40, 1 figure, 14 plates.
- Velasquez, G.T., and J.D. Soriano
*1957. The Ecology of the Philippine Myxophyceae. In *Proceedings of the Eighth Pacific Science Congress* [Quezon City, 1957], volume 4, pages 483–490.
- Velasquez, G.T., G.C. Trono, Jr., and M.S. Doty
*1975. Algal Species Reported from the Philippines. *Philippine Journal of Science*, 101:115–169.
- Veroy, R.L., N. Montañó, M.L.B. de Guzman, E.C. Laserna, and G.J.B. Cajipe
*1980. Studies on the Binding of Heavy Metals to Algal Polysaccharides from Philippine Seaweeds, I: Carrageenan and the Binding of Lead and Cadmium. *Botanica Marina*, 23:59–62, 1 figure.
- Vickers, A.
1905. Liste des algues marines de la Barbade. *Annales des Sciences Naturelles, Botanique*, series 9, 1:45–66.
- Villadolid, D.V., and D.K. Villaluz
*1953. A Preliminary Study on Baños Cultivation and Its Relation to Algae Culture in the Philippines. *Republic of the Philippines, Department of Agriculture and Natural Resources, Popular Bulletin*, 30: 16 pages.
- Villaluz, D.K.
*1953. *Fish Farming in the Philippines*. viii + 336 pages. Manila: Bookman.
- Villones, A.I., and L.G. Magdamo
*1968. A Checklist of the Littoral Marine Algae at Bagong Silang, Calatagan, Batangas. *Philippine Biota*, 3:9–16, 24–30, figures 2–8, 10–14, 16, 17, 19–33. [Figure 1 not cited and not published, figures 9, 15, and 18 cited but not published.]
- Voss, E.G.
*1961. Harley Harris Bartlett. *Bulletin of the Torrey Botanical Club*, 88:47–56, including portrait.
- Voss, E.G., et al. [editors]
1983. International Code of Botanical Nomenclature Adopted by the Thirteenth International Botanical Congress, Sydney, August 1981. *Regnum Vegetabile*, 111: xv + 472 pages.
- Vreeland, N., G. Hurwitz, P. Just, P. Moeller, and R. Shinn
1976. *Area Handbook for the Philippines*. xiv + 458 pages, 18 tables, 14 figures. Washington, D.C.: U.S. Government Printing Office. [American University Foreign Area Studies.]
- Weber, F., and D.M.H. Mohr
1804. *Naturhistorische Reise durch einen Theil Schwedens*. Pages i–xii + 13–207, 3 plates. Göttingen.
- Weber-van Bosse, A.
1898. Monographie des Caulerpes. *Annales du Jardin Botanique de Buitenzorg*, 15:243–401, plates XX–XXXIV.
1901. Études sur les algues de l'Archipel Malaisien. III: Note préliminaire sur les résultats algologiques de l'expédition du Siboga. *Annales du Jardin Botanique de Buitenzorg*, 17:126–141, plates XVII–XIX.
- 1904a. Note sur Deux Algues de l'Archipel Malaisien. *Recueil des Travaux Botaniques Néerlandais*, 1:96–105, 2 figures.
- *1904b. Corallinae verae of the Malay Archipelago. In A. Weber-van Bosse and M. Foslie, *The Corallinae of the Siboga-Expedition. Siboga-Expeditie Monographie*, 61:78–110, plates XIV–XVI.
1905. Note sur le genre *Dictyosphaeria* Dec. *Nuova Notarisa*, 16:142–144.
1910. Sur deux nouveaux cas de symbiose entre algues et éponges.

- Annales du Jardin Botanique de Buitenzorg, Supplément*, 3:587–594, plates XVI, XVII.
1911. Notice sur quelques genres nouveaux d'algues de l'Archipel Malaisien. *Annales du Jardin Botanique de Buitenzorg*, 24:25–33.
- *1913a. Liste des algues du Siboga, I: Myxophyceae, Chlorophyceae, Phaeophyceae avec le concours de M. Th. Reinbold. *Siboga-Expedition Monographie*, 59a:1–186, figures 1–52, plates I–V.
- 1913b. Marine Algae, Rhodophyceae, of the "Sealark" Expedition, Collected by Mr. J. Stanley Gardiner, M.A. *Transactions of the Linnean Society of London, Botany*, 8:105–142, 1 figure, plates 12–14.
- *1921. Liste des algues du Siboga, II: Rhodophyceae, Première partie: Protofloridae, Nemalionales, Cryptonemiales. *Siboga-Expedition Monographie*, 59b:187–310, figures 53–109, plates VI–VIII.
- *1923. Liste des algues du Siboga, III: Rhodophyceae. Seconde partie. Ceramiales. *Siboga-Expedition Monographie*, 59c:311–392, figures 110–142, plates IX, X.
1926. Algues de l'Expédition danoise aux îles Kei. *Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening i København*, 81:57–155, 43 figures.
- *1928. Liste des algues du Siboga, IV: Rhodophyceae. Troisième partie. Gigartinales et Rhodymeniales et tableau de la distribution des Chlorophycées, Phaeophycées et Rhodophycées de l'Archipel Malaisien. *Siboga-Expedition Monographie*, 59d:393–533, figures 143–213, plates XI–XVI.
- Wells, A.H.
- *1916. Possibilities of gulaman dagat as a Substitute for Gelatin in Food. *Philippine Journal of Science*, 11A:267–271.
- West, G.S.
1904. West Indian Freshwater Algae. *Journal of Botany*, 42:281–294, plate 464.
- West, W., and G.S. West
1897. Welwitsch's African Freshwater Algae. *Journal of Botany*, 35:1–7, 33–42, 77–89, 113–122, 172–183, 235–243, 264–272, 297–304, plates 365–369.
- Wester, P.J.
- *1916. The Food Plants of the Philippines. *Philippine Agricultural Review*, 9:150–256, XII plates. [Algae, pages 158–159.]
- *1921. The Food Plants of the Philippines. *Philippine Agricultural Review*, 14:211–384, XXXV plates. [Algae, pages 223–224.]
- *1924. The Food Plants of the Philippines (Third Revised Edition). *The Government of the Philippine Islands, Department of Agriculture and Natural Resources, Bureau of Agriculture, Bulletin*, 39: x + 236 pages, 1 figure, LXVII plates. [Algae, pages 21–22.]
- Westernhagen, H. von
- *1973a. A Preliminary Study on the Food Preferences of *Siganus concatenata* (Cuvier and Valenciennes). *Philippine Scientist* [University of San Carlos], 10:61–73.
- *1973b. The Natural Food of the Rabbitfish *Siganus oramin* and *S. striolata*. *Marine Biology*, 22:367–370.
- *1974. Food Preferences in Cultured Rabbitfishes (Siganidae). *Aquaculture*, 3:109–117, II tables.
- Wiggers, F.H.
1780. *Primitiae florae holsaticae*. [viii] + 112 pages. Kilja [Kiel].
- Wille, N.
- 1909–1910. Conjugatae und Chlorophyceae. In A. Engler and K. Prantl, editors, *Die natürlichen Pflanzenfamilien . . . Nachträge zu I. Teil, Abt. 2*, pages 1–136, figures 1–70. [1909 = pages 1–96, figures 1–50; 1910 = pages 97–136, figures 51–70.]
- Withering, W.
1776. *A Botanical Arrangement of All the Vegetables Naturally Growing in Great Britain*. xcvi + 838 pages, 12 plates. Birmingham.
- Wittrock, V.B.
1866. *Försök till en monografi öfver algsläktet Monostroma*. Academisk afhandling . . . Uppsala . . . 23 Maj 1866. 66 pages, IV plates. Stockholm.
- Woelkerling, W.J.
1971. Morphology and Taxonomy of the *Audouinella* Complex (Rhodophyta) in Southern Australia. *Australian Journal of Botany, Supplement*, 1: 91 pages, 27 figures.
1973. The *Audouinella* Complex (Rhodophyta) in the Western Sargasso Sea. *Rhodora*, 75:78–101.
- 1983a. The *Audouinella* (*Acrochaetium*-*Rhodochorton*) Complex (Rhodophyta): Present Perspectives. *Phycologia*, 22:59–92, 22 figures.
- 1983b. A Taxonomic Reassessment of *Lithothamnium* (Corallinaceae, Rhodophyta) Based on Studies of R.A. Philippi's Original Collections. *British Phycological Journal*, 18:165–197, 33 figures.
- Woelkerling, W.J., and L.M. Irvine
1986. The Typification and Status of *Phymatolithon* (Corallinaceae, Rhodophyta). *British Phycological Journal*, 21:55–80, 18 figures.
- Womersley, H.B.S.
1964. The Morphology and Taxonomy of *Cystophora* and Related Genera (Phaeophyta). *Australian Journal of Botany*, 12:53–110, 48 figures, 16 plates.
1967. A Critical Survey of the Marine Algae of Southern Australia, II: Phaeophyta. *Australian Journal of Botany*, 15:189–270, 6 figures.
1978. Southern Australian Species of *Ceramium* Roth (Rhodophyta). *Australian Journal of Marine and Freshwater Research*, 29:205–257, 15 figures.
1979. Southern Australian Species of *Polysiphonia* Greville (Rhodomelaceae). *Australian Journal of Botany*, 27:459–528, 14 figures.
1984. *The Marine Benthic Flora of Southern Australia, Part I*. 329 pages, 16 plates, 102 figures. [Adelaide], South Australia: Government Printer.
- Womersley, H.B.S., and A. Bailey
1970. Marine Algae of the Solomon Islands. *Philosophical Transactions of the Royal Society of London*, 259B:257–352, 26 figures in text and on plates 24–27.
- Woodward, T.J.
1794. Description of *Fucus dasyphyllus*. *Transactions of the Linnean Society* [London], 2:239–241, plate 23: figures 1–3.
- Wulfen, F.X.
1803. *Cryptogama aquatica*. *Archiv für die Botanik*, 3:1–64, plate 1.
- Wynne, M.J.
- 1985a. Notes on *Herposiphonia* (Rhodomelaceae, Rhodophyta) in South Africa, with a Description of a New Species. *Cryptogamie: Algologie*, 5:167–177, 12 figures.
- 1985b. Concerning the Names *Scagelia corallina* and *Heterosiphonia wurdemannii* (Ceramiales, Rhodophyta). *Cryptogamie: Algologie*, 6:81–90, 4 figures.
- Xia, B., and I.A. Abbott
1985. The Genus *Polycavernosa* Chang et Xia (Gracilariaceae, Rhodophyta): a Comparison with *Gracilaria* Grev., and a Key to the Species. In I.A. Abbott and J.N. Norris, editors, *Taxonomy of Economic Seaweeds with Reference to Some Pacific and Caribbean Species*, pages 157–162, 5 figures. [California Sea Grant College Program Report, T-CSGCP-011.]
- Yamada, Y.
- 1925a. Studien über die Meeresalgen von der Insel Formosa, I: Chlorophyceae. *Botanical Magazine* [Tokyo], 39:77–95, V figures.
- 1925b. Studien über die Meeresalgen von der Insel Formosa, II: Phaeophyceae. *Botanical Magazine* [Tokyo], 39:239–254, VI figures.
1928. Report of the Biological Survey of Mutsu Bay, 9: Marine Algae of Mutsu Bay and Adjacent Waters, II. *Scientific Reports of the Tôhoku Imperial University, Biology*, 3:497–534, 25 figures.
- 1930a. Une nouvelle espèce d'*Udotea* du Pacifique: *Udotea geppii* sp.

- nov. *Revue Algologique*, 5:139–142, 3 figures.
- 1930b. Notes on Some Japanese Algae, I. *Journal of the Faculty of Science, Hokkaido Imperial University, Botany*, 1:27–36, 2 figures, plates II–VI.
- 1931a. Notes on Some Japanese Algae, II. *Journal of the Faculty of Science, Hokkaido Imperial University, Botany*, 1:65–76, 3 figures, plates XVI–XX.
- 1931b. Notes on *Laurencia*, with Special Reference to the Japanese Species. *University of California Publications in Botany*, 16:185–310, including 30 plates, 20 figures.
- 1932a. Notes on Some Japanese Algae, III. *Journal of the Faculty of Science, Hokkaido Imperial University, Botany*, 1:109–123, 5 figures, plates XXI–XXV.
- 1932b. Notes on Some Japanese Algae, IV. *Journal of the Faculty of Science, Hokkaido Imperial University, Botany*, 2:267–276, 3 figures, plates III–IX.
1933. Notes on Some Japanese Algae, V. *Journal of the Faculty of Science, Hokkaido Imperial University, Botany*, 2:277–285, plates X–XIII.
1934. The Marine Chlorophyceae from Ryukyu, Especially from the Vicinity of Nawa. *Journal of the Faculty of Science, Hokkaido Imperial University, Botany*, 3:33–88, 55 figures.
1935. Notes on Some Japanese Algae, VI. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 1:27–35, 3 figures, plates 11–16.
- 1936a. The Species of *Eucheuma* from Ryûkyû and Formosa. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 1:119–134, 13 figures, plates 21–29.
- 1936b. Notes on Some Japanese Algae, VII. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 1:135–140, 3 figures, plates 30–33.
- 1938a. The Species of *Liagora* from Japan. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 2:1–34, 22 figures, plates 1–15.
- 1938b. Notes on Some Japanese Algae, VIII. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 2:119–130, 4 figures, plates 19–31.
- 1941a. Notes on Some Japanese Algae, IX. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 2:195–215, 15 figures, plates 40–48.
- 1941b. [On the Species of *Halimeda* from Micronesia.] *Kagaku Nanyô*, 4:108–121, 15 figures. [In Japanese.]
1944. A List of the Marine Algae from the Atoll of Ant. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 3:31–45, plates 6, 7.
1950. A List of Marine Algae from Ryukyusho, Formosa I: Chlorophyceae and Phaeophyceae. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido University*, 3:173–194, 9 figures.
- Yamada, Y., and T. Tanaka
1934. Three New Red Algae from Formosa. *Transactions of the Natural History Society of Formosa*, 24:342–349, 5 figures.
1938. The Marine Algae from the Island of Yonakuni. *Scientific Papers of the Institute of Algological Research, Faculty of Science, Hokkaido Imperial University*, 2:53–86, 13 figures.
- Yendo, K.
1902. Corallinae verae japonicae. *Journal of the College of Science, Imperial University of Tokyo*, 16(3): 36 pages, VII plates.
- 1905a. [Preliminary List of Japanese Fucaceae.] *Botanical Magazine* [Tokyo], 19:(149)–(161). [In Japanese.]
- 1905b. A Revised List of Corallinae. *Journal of the College of Science, Imperial University of Tokyo*, 20(12): 46 pages.
1907. The Fucaceae of Japan. *Journal of the College of Science, Imperial University of Tokyo*, 21(12): 174 pages, XVIII plates.
1914. Notes on Algae New to Japan, II. *Botanical Magazine* [Tokyo], 28:263–281, [1] figure.
1917. Notes on Algae New to Japan, VI. *Botanical Magazine* [Tokyo], 31:75–95, 3 figures.
1920. Novae algae Japoniae, Decas I–III. *Botanical Magazine* [Tokyo], 34:1–12.
- Yoshida, T.
1978. [Lectotypification of *Sargassum kjellmanianum* and *S. miyabei* (Phaeophyta, Sargassaceae).] *Japanese Journal of Phycology*, 26:121–124, 4 figures. [In Japanese.]
1980. Typification of the Taxa Described by Yendo in His "Fucaceae". *Journal of the Faculty of Science, Hokkaido University, Botany*, 12:99–106, VII plates.
1983. Japanese Species of *Sargassum* Subgenus *Bactrophycus* (Phaeophyta, Fucales). *Journal of the Faculty of Science, Hokkaido University, Botany*, 13:99–246, 99 figures.
- Zanardini, G.
- 1840a. [Lettera] Alla Direzione della Biblioteca Italiana. *Biblioteca Italiana* [Milano], 96:131–137.
- 1840b. Sopra le alghe del mare Adriatico. Lettera seconda . . . alla Direzione della Biblioteca Italiana. *Biblioteca Italiana* [Milano], 99:195–229.
1841. Synopsis algarum in mari Adriatico hucusque collectarum. *Memorie della Reale Accademia delle Scienze di Torino*, series 2, 4:105–255, plates I–III.
1843. Saggio di classificazione naturale delle Ficee. 64 pages, [1] plate. Venezia [Venice].
1847. Notizie intorno alle cellulari marine delle lagune e de' litorali di Venezia. *Atti del Reale Istituto Veneto di Scienze, Lettere ed Arti*, 6:185–262, plate I.
1851. Algae novae vel minus cognitae in mari Rubro a Portiero collectae. *Flora*, 34:33–38.
1858. Plantarum in mari Rubro hucusque collectarum enumeratio (juvante A. Figari). *Memorie del Reale Istituto Veneto di Scienze, Lettere ed Arti*, 7:209–309, plates III–XIV.
1865. Scelta di Ficee nuove o più rare dei mari Mediterraneo ed Adriatico, Decade VI. *Memorie del Reale Istituto Veneto di Scienze, Lettere ed Arti*, 12:375–410, plates XIV[XLI]–XXI[XLVIII].
1872. Phycarum indicarum pugillus a Cl. Eduardo Beccari ad Bornum, Sincapoore et Ceylanum annis MDCCCLXV–VI–VII collectarum. *Memorie del Reale Istituto Veneto di Scienze, Lettere ed Arti*, 17:129–170, plates I–XII.
1873. Scelta di Ficee nuove o più rare dei mari Mediterraneo ed Adriatico, Decade XII. *Memorie del Reale Istituto Veneto di Scienze, Lettere ed Arti*, 17:427–460, plates XIV[LXXXIX]–XXXI[XCVI].
1874. Phyceae australicae novae vel minus cognitae. *Flora*, 57:486–490, 497–505.
1878. Phyceae papuanae novae vel minus cognitae a cl. O. Beccari in itinere ad Novam Guineam annis 1872–75 collectae. *Nuovo Giornale Botanico Italiano*, 10:34–40.
- Zaneveld, J.S.
- *1950. The Economic Marine Algae of Malaysia and Their Applications. [I. Cyanophyta and Chlorophyta.] In *Proceedings of the Indo-Pacific Fisheries Council, 1st Meeting* [Singapore, 1949]. Pages 107–114.
- *1952. The Economic Marine Algae of Malaysia and Their Applications, II: The Phaeophyta. In *Proceedings of the Indo-Pacific Fisheries Council, 3rd Meeting* [Madras, 1951]. Pages 129–133.
- *1956. The Economic Marine Algae of the Tropical Regions of South and East Asia and Their Utilization. *Indo-Pacific Fisheries Council, Special Publications*, 3: [ii+] 55 pages.
- *1959. The Utilization of Marine Algae in Tropical South and East

Asia. *Economic Botany*, 13:89-131, 27 figures.

Zarsuelo, J.C.

- *1972. The Benthic Algae of Silut Bay (Liloan, Cebu, Philippines) and Some Physico-Chemical Factors Affecting Their Distribution and Abundance. *Philippine Scientist* [University of San Carlos], 9:102. [Abstract of master's thesis.]

Zeller, G.

- '1873. Algae Collected by Mr. S. Kurz in Arracan and British Burma,

Determined and Systematically Arranged by Dr. G. Zeller.

Journal of the Asiatic Society of Bengal, 42(2):175-193.

Zollinger, H.

1854. *Systematisches Verzeichniss der im indischen Archipel in den Jahren 1842-1848 gesammelten sowie der aus Japan empfangenen Pflanzen*. xii + 160 pages. Zürich.

Index

(Valid taxa (centered heads in the text) appear in roman; invalid taxa in italic.)

- abrotanifolius*, *Fucus*, 26
abscissus, *Fucus*, 129
Acanthocodium fragile, 112
Acanthophora, 60
 aokii, 60
 muscoides, 60
 orientalis, 61
 spicifera, 60
 spicifera f. *orientalis*, 61
 thierryi, 61
acanthophorus, *Fucus*, 61
acerosa, *Gelidiella*, 25
acerosus, *Fucus*, 25
Acetabularia, 121
 calyculus, 121
 clavata, 121
 crenulata, 121
 dentata, 121
 exigua, 121
 major, 121
 minutissima, 122
 moebii, 122
 parvula, 122
 philippinensis, 122
 roxasii, 122
 ryukyuensis, 122
 ryukyuensis var. *philippinensis*, 122
 velasquezii, 122
aciculare, *Sargassum*, 84
aciculare, *Sargassum filifolium* var., 84
Acrocarpus pusillus, 25
Acrochaetium, 8, 123, 127
 daviesii, 128
 gracile, 18
 hallandicum, 19
 hancockii, 19
 liagorae, 19
 nitidulum, 19
 papenfussii, 19
 robustum, 19
 sargassi, 19
 secundatum, 128
 seriatum, 19
 sinicola, 19
 trichogloea, 19
 tuticorinense, 19
Acrocystis, 61
 nana, 61
Actinotrichia, 22
 fragilis, 22
 rigida, 22
acuminata, *Galaxaura*, 22
acuminata, *Grateloupia*, 30
acuminata, *Halymenia*, 30
acutissimus, *Microcoleus*, 10, 12
adhaerens, *Callophyllis*, 31
adhaerens, *Codium*, 111, 112
adhaerens, *Dasya*, 59
adhaerens, *Jania*, 34
adnata, *Callophyllis*, 31
adnata, *Caloglossa*, 58
adnata, *Delesseria*, 58
adnata, *Gelidiella*, 25
aegagropila, *Cladophora*, 5
aegagropila, *Valonia*, 102
aemulum, *Sargassum*, 82
aerea, *Chaetomorpha*, 95
aerea, *Conserva*, 95
aeruginea, *Calothrix*, 13
aeruginea, *Leibleinia*, 13
aeruginosa, *Anacystis*, 7
aeruginosa, *Gracilaria foliifera* f., 42
aeruginosa, *Gracilaria multipartita* var., 42
aeruginosa, *Palmogloea*, 7
aeruginosus, *Fucus*, 42
aestuarii, *Conserva*, 9
aestuarii, *Lyngbya*, 9
affine, *Ceramium*, 54
affinis, *Carpopeltis*, 28
affinis, *Gigartina*, 28
africana, *Roschera*, 71
africanum, *Rhizoclonium*, 99
agardhianum, *Microdictyon*, 95
agardhianum, *Sargassum*, 82
Agardhiella, 44, 123
Aglaothamnion, 56
Ahnfeltia, 50, 123
 concinna, 50
 furcellata, 51
ajakii-assii, *Eucheuma alvarezii* var., 45
albida, *Annulina*, 97
albida, *Cladophora*, 97
albida, *Conserva*, 97
alcyonida, *Eucheuma arnoldii* var., 45
alsidii, *Bangia*, 17
alsidii, *Goniotrichum*, 17
Alsidium, 61
 helminthochortos, 95
 pusillum, 61
alvarezii, *Eucheuma*, 45
alvarezii var. *ajakii-assii*, *Eucheuma*, 45
alvarezii var. *tambalangii*, *Eucheuma*, 45
Amansia, 61, 123
 glomerata, 61
 jungermanniioides, 68
amansii, *Fucus*, 25
amansii, *Gelidium*, 25
ambigua, *Caulerpa*, 104
ambigua, *Desmia*, 129
ambiguum, *Phormidium*, 9, 11, 14
amicorum, *Caulerpa*, 105
amicorum, *Caulerpa cupressoides* var. *lycopodium* f., 105
amoena, *Amphithrix*, 11
amoenum, *Phormidium*, 11
Amphiroa, 32, 123
 anastomosans, 32
 anceps, 32
 annulata, 32
 beauvoisii, 32
 cultrata, 34
 cumingii, 32
 cyathifera, 33
 dilatata, 32
 ephedraea, 32
 foliacea, 33
 foliacea f. *erecta*, 33
 fragilissima, 33
 fragilissima f. *cyathifera*, 33
 hancockii, 33
 pacifica, 33
 rigida, 33
 subcylindrica, 33
 tribulus, 33
 valonioides, 34
 zonata, 34
Amphithrix amoena, 11
Anabaena, 123
Anabaina, 8, 123
 oscillarioides, 8
 pseudoscillatoria, 8
Anacystis, 7
 aeruginosa, 7
Anadyomene, 94, 125
 brownii, 94
 eseptata, 94
 flabellata, 95
 leclancheri, 94
 obscura, 117
 plicata, 94
 stellata, 94
 wrightii, 95
anastomosans, *Amphiroa*, 32
anastomosans, *Cladophora*, 101
anastomosans, *Dasyopsis*, 129
anastomosans, *Eupogodon*, 129
anastomosans, *Struvea*, 101
anceps, *Amphiroa*, 32
anceps, *Corallina*, 32
andamanensis, *Giffordia*, 130
andamanensis, *Hincksia*, 130
andersonii, *Gracilaria*, 43
andoi, *Bostrychia*, 62
angusta, *Carpopeltis*, 28
angustifolium, *Sargassum binderi* var., 82

- angustus*, *Gymnogongrus ligulatus* var., 28
annulata, *Amphiroa*, 32
annulata, *Neomeris*, 121
Annulina albida, 97
Anotrichium, 53
 tenue, 53
antennina, *Chaetomorpha*, 95
antennina, *Conferva*, 95
anthoninii, *Gelidium*, 5
antillanum, *Antithamnion*, 53
antillarum, *Dasyopsis*, 60, 129
antillarum, *Eupogodon*, 60, 129
Antithamnion, 53, 123
 antillanum, 53
 lherminieri, 53
 subcorticalum, 54
aokii, *Acanthophora*, 60
aokii, *Cladophora*, 97
aperta, *Dasyopsis*, 129
apertus, *Eupogodon*, 129
Aphanocapsa, 123
apiculata, *Bonnemaisonia*, 129
apiculata, *Galaxaura*, 22
apiculata, *Polysiphonia*, 69
apiculatum, *Centroceras*, 54
apiculatus, *Eupogodon*, 129
arabicum, *Codium*, 111
aragoensis, *Enteromorpha*, 91
arborea, *Galaxaura*, 22
arborescens, *Padina*, 77
Archaeolithothamnion
 erythraeum f. *durum*, 38
 erythraeum f. *molle*, 38
 schmidtii, 39
 sibogae, 39
 timorense, 39
arcuata, *Gracilaria*, 40
arcuata var. *snackeyi*, *Gracilaria*, 41
arenaria, *Schizothrix*, 13
arenicola, *Caulerpa*, 104
argentea, *Udotea*, 118
argentea var. *spumosa*, *Udotea*, 119
argus, *Griffithsia*, 57
argus, *Wrangelia*, 57
armata, *Chondria*, 62
armata, *Lophura*, 62
arnoldii, *Euclima*, 45
arnoldii var. *alcyonida*, *Euclima*, 45
articulata, *Carpopeltis*, 29
articulata, *Cystoseira*, 81, 131
articulata, *Lomentaria*, 52
articulata, *Prionitis*, 29
articulata, *Ulva*, 52
articulatus, *Fucus*, 81, 131
Asparagopsis, 21
 delilei, 21
 sanfordiana, 22
 taxiformis, 21
Asperococcus
intricatus, 80
 orientalis, 80
asperum, *Spatoglossum*, 79
Asterocytis, 123
 ornata, 17
atomaria, *Dictyota*, 76
atomarius, *Fucus*, 76
atropurpurea, *Bangia*, 17
atropurpurea, *Conferva*, 17
atropurpurea, *Porphyra*, 18
atropurpurea, *Ulva*, 18
attenuata, *Crouania*, 56
attenuata, *Derbesia*, 104
attenuata, *Mesogloia*, 56
attenuatum, *Hypoglossum*, 58
australasicus, *Chlorocladus*, 120, 126
australasicus, *Dasycladus*, 120
australe f. *brachiatum*, *Lithothamnion*, 36
australe f. *minutulum*, *Lithothamnion*, 37
australe f. *ubianum*, *Lithothamnion*, 37
australis, *Helminthocladia*, 20
australis, *Padina*, 77
Audouinella, 127, 128
Avrainvillea, 117
 capituliformis, 117
 erecta, 117
 lacerata, 117
 lacerata var. *robustior*, 117
 levis, 117
 longicaulis, 117
 nigricans, 117
 obscura, 117
 sordida, 117
bacciferum, *Sargassum*, 86
bacciferus, *Fucus*, 86
baccularia, *Fucus*, 82
baccularia, *Sargassum*, 82
baileyana, *Chylocladia*, 52
baileyana, *Lomentaria*, 52
baillouviana, *Dasya*, 59
baillouviana, *Fucus*, 59
Baillouviana punicea, 59
Balliella, 54
 subcorticata, 54
Bangia, 15, 17
 alsidii, 17
 atropurpurea, 17
 elegans, 17
 fuscopurpurea, 18
 yamadae, 18
bangioides, *Erythrotrichia*, 17
bartayresiana, *Dictyota*, 75
bartayresiana var. *denticulata*, *Dictyota*, 75
bartayresii, *Dictyota*, 75
bartlettii, *Codium*, 112
basilanicum, *Sargassum siliquosum* var., 88
batanensis, *Claudea*, 58
batanensis, *Halimeda*, 116
Batrachospermum requienii, 19
beaudettei, *Polysiphonia*, 69
beauvoisii, *Amphiroa*, 32
Beckerella, 25
 scalaramosa, 25
belangeri, *Sargassum*, 82
benkulense, *Sargassum ilicifolium* f., 85
berberifolium, *Sargassum*, 82
bernardinum, *Sargassum oligocystum* var., 86
bernardinum, *Sargassum oocyste* var., 87
bhimlipatnamensis, *Giffordia*, 130
bhimlipatnamensis, *Hincksia*, 130
bicornutum, *Sargassum siliquosum* var., 88
bicuspidata, *Wrangelia*, 57
bidentata, *Dictyota*, 75
bifida, *Champia*, 53
biforme, *Sargassum*, 82
bikinensis, *Halimeda*, 114
binderi, *Bostrychia*, 61
binderi, *Sargassum*, 86
binderi var. *angustifolium*, *Sargassum*, 82
binderi var. *vitiense*, *Sargassum*, 86
biseriata, *Erythrotrichia*, 17
blodgettii, *Gracilaria*, 41
Boergesenia, 100, 125
 forbesii, 100
boergesenii, *Hypnea*, 48
boergesenii, *Liagora*, 20
boergesenii, *Microdictyon*, 95
Bonnemaisonia apiculata, 129
bonnemaisonii, *Oscillaria*, 11
bonnemaisonii, *Oscillatoria*, 11
Boodlea, 100, 125
 coacta, 100
 composita, 100
 montagnei, 100
 siamensis, 100
 struveoides, 100
 vanbosseae, 5
Boodleopsis, 117
 pusilla, 117
 verticillata, 117
borealis, *Rhodopeltis*, 39
Bornetella, 119
 nitida, 119
 oligospora, 120
 ovalis, 120
 sphaerica, 120
bornetii, *Tapeinodasya*, 60
boryana, *Caulerpa*, 109
boryana, *Caulerpa serrulata* var., 109
boryana f. *longifolia*, *Caulerpa serrulata* var., 109
boryana f. *occidentalis*, *Caulerpa freycinetii* var., 109
boryana f. *occidentalis*, *Caulerpa serrulata* var., 109
boryana, *Padina*, 77
Bostrychia, 61
 andoi, 62
 binderi, 61
 calliptera, 61
 intricata, 61
 kelanensis, 62
 mixta, 62
 mixta f. *inermis*, 62
 moritziana, 62
 radicans, 62
 riularis, 62
 simpliciuscula, 62
 tenella, 62
 tenuis, 62
 tenuis f. *simpliciuscula*, 62

- Botryocarpa*, 58
prolifera, 58
botryocarpus, *Fucus*, 58
Botryocladia, 51
botryoides, 51
kuckuckii, 51
pyriformis, 51
skottsbergii, 51
uvarioides, 51
botryoides, *Botryocladia*, 51
botryoides, *Fucus*, 51
brachiatum, *Lithothamnion australe* f., 36
brachygona, *Chaetomorpha*, 95
brachypus, *Caulerpa*, 104, 125
brachypus f. *parvifolia*, *Caulerpa*, 104
Brachytrichia, 15
maculans, 15
quoyi, 15
breviarticulata, *Hinckesia*, 73
breviarticulatus, *Ectocarpus*, 73
brevior, *Corallina unguolata* f., 36
brevior, *Jania unguolata* f., 36
brevipes, *Caulerpa plumaris* var., 110
brevipes, *Caulerpa sertularioides* f., 110
brevis, *Oscillatoria*, 5
brongniartii, *Laurencia*, 64
brownii, *Anadyomene*, 94
brownii, *Calomena*, 94
Bryopsis, 103, 125
corticulans, 103
indica, 103
pachynema, 103
pennata, 103
pennata var. *secunda*, 103
plumosa, 103
plumosa var. *secunda*, 103
tenuissima, 104
Bryothamnion
triangulare, 131
triquetrum, 130
bullata, *Dictyosphaeria cavernosa* var., 102
bullata, *Rivularia*, 13, 14
bullata, *Ulva*, 14
bursa-pastoris, *Fucus*, 41
bursa-pastoris, *Gracilaria*, 41
byssoides, *Lithophyllum*, 36
byssoides, *Lithothamnion*, 36
byssoides, *Nullipora*, 36
byssoides, *Ceramium*, 54, 55
byssoides, *Ceramium gracillimum* var., 54
caenomyce, *Liagora*, 20
caenomyce, *Yamadaella*, 20
caespitosa, *Catenella*, 48
caespitosa, *Champia*, 53
caespitosa, *Chlorodesmis*, 118
caespitosa, *Ulva*, 48
calcareum, *Millepora*, 38
calcareum, *Lithothamnion*, 38
calcareum, *Phymatolithon*, 38
calcea, *Peyssonnelia*, 27
calicicola, *Schizothrix*, 9, 10, 11, 12
californica, *Giffordia hincksiae* var., 130
californica, *Grateloupia*, 30
californica, *Hinckesia hincksiae* var., 130
californica, *Kallymenia*, 32
californica, *Meredithia*, 32
californica, *Rhodymenia*, 52
Calliarthron, 123
calliptera, *Bostrychia*, 61
calliptera, *Rhodomela*, 61
Callithamnion, 123
daviesii var. *secundatum*, 128
elegans, 57
Callophycus, 45
serratus, 45
Callophyllis, 31, 123, 129
adhaerens, 31
adnata, 31
chilensis, 32
japonica, 32
okamurae, 32
callophylloides, *Kallymenia*, 32
calodictyon, *Polysiphonia*, 71
calodictyon, *Tolypocladia*, 71
Caloglossa, 58
adnata, 58
lepieurii, 58
lepieurii var. *hookeri*, 58
ogasawaraensis, 58
caloglossoides, *Gelidium*, 27
caloglossoides, *Pterocladia*, 27
Calomena brownii, 94
Calothrix, 13, 123
aeruginea, 13
comoides, 8
confervicola, 13
contarenii, 13
crustacea, 13, 14, 15
epiphytica, 13
hydroides, 13
luteofusca, 10
parietina, 13, 14
pilosa, 14, 13, 15
robusta, 14
scopulorum, 14
semiplena, 10
sordida, 10
viguieri, 14
calyculus, *Acetabularia*, 121
camiguinensis, *Dictyopteris*, 74
canaliculata, *Gracilaria*, 41
canaliculatus, *Sphaerococcus*, 41
canariensis, *Liagora*, 20
cancellatus, *Hydroclathrus*, 80
cantharidosma, *Lyngbya*, 8
cantharidosmum, *Hydrocoleum*, 8
capense, *Gelidium*, 26
capensis, *Fucus*, 26
capensis, *Turbinaria trialata* var., 90
capillacea, *Jania*, 35
capillacea, *Leibleinia*, 10
capillacea, *Pterocladia*, 27
capillaceus, *Fucus*, 27
capillare, *Rhizoclonium*, 96
capitellata, *Carpopeltis*, 29
capitellata, *Cryptonemia*, 29
capituliformis, *Avrainvillea*, 117
capituliformis, *Laurencia*, 65
caraibica, *Laurencia*, 65
carolinensis, *Laurencia*, 65
carolyniae, *Rhipiliopsis*, 118
Carpacanthus
cystophyllus, 83
gaudichaudii, 84
ilicifolius, 85
microcystis, 85
spinulosus, 85
Carpopeltis, 28, 123
affinis, 28
angusta, 28
articulata, 29
capitellata, 29
cornea, 31
crispata, 29
divaricata, 29
flabellata, 29
formosana, 29
maillardii, 29
prolifera, 29
rigida, 29
carpophyllum, *Sargassum*, 85
cartilaginea, *Laurencia*, 65
cartilagineum, *Gelidium*, 26
cartilagineum, *Fucus*, 26
catenata, *Cladophora*, 97
catenata, *Conserva*, 97
Catenella, 48
caespitosa, 48
impudica, 48
nipae, 48
opuntia, 48
Caulerpa, 104, 125
ambigua, 104
amicorum, 105
arenicola, 104
boryana, 109
brachypus, 104, 125
brachypus f. *parvifolia*, 104
chemnitzia var. *occidentalis*, 108
clavifera, 106
clavifera var. *gracilis*, 107
clavifera var. *turbinata*, 108
corynephora, 107
crassifolia, 106
cupressoides, 104
cupressoides var. *disticha*, 105
cupressoides var. *ericifolia*, 105
cupressoides var. *lycopodium*, 105
cupressoides var. *lycopodium* f. *amicorum*, 105
cupressoides var. *lycopodium* f. *disticha*, 105
cupressoides var. *lycopodium* f. *elegans*, 105
elongata, 105
fastigiata, 105
fergusonii, 105
filicoides, 105
freycinetii, 109
freycinetii var. *boryana* f. *occidentalis*, 109
freycinetii var. *pectinata*, 109
freycinetii var. *typica* f. *lata*, 109
freycinetii var. *typica* f. *spiralis*, 109

- humii*, 109
laetevirens, 107
lentillifera, 105
lentillifera var. *compacta*, 106
lentillifera var. *longistipitata*, 106
lessonii, 106
lycopodium, 105
macrodisca, 108
mexicana, 106
mexicana var. *pluriseriata*, 106
microphysa, 106
nummularia, 108
parvifolia, 104
peltata, 108
peltata var. *macrodisca*, 108
peltata var. *nummularia*, 108
pickeringii, 111
plumaris, 110
plumaris f. *farlowii*, 110
plumaris f. *flagellata*, 110
plumaris var. *brevipes*, 110
plumaris var. *elegans*, 105
plumaris var. *longipes*, 110
plumaris var. *longiseta*, 110
prolifera, 106
racemosa, 106
racemosa var. *chemnitzia*, 108
racemosa var. *clavifera*, 107
racemosa var. *clavifera* f. *microphysa*, 106
racemosa var. *corynephora*, 107
racemosa var. *gracilis*, 107
racemosa var. *laetevirens*, 107
racemosa var. *lamourouxii*, 107
racemosa var. *macra*, 107
racemosa var. *macrophysa*, 107
racemosa var. *occidentalis*, 108
racemosa var. *peltata*, 108
racemosa var. *turbinata*, 108
racemosa var. *uvifera*, 107
reyesii, 108
selago, 108
serrulata, 108
serrulata f. *lata*, 109
serrulata f. *spiralis*, 109
serrulata var. *boryana*, 109
serrulata var. *boryana* f. *longifolia*, 109
serrulata var. *boryana* f. *occidentalis*, 109
serrulata var. *pectinata*, 109
sertularioides, 109
sertularioides f. *brevipes*, 110
sertularioides f. *farlowii*, 110
sertularioides f. *flagellata*, 110
sertularioides f. *longipes*, 110
sertularioides f. *longiseta*, 110
simpliciuscula var. *vesiculifera*, 111
subserrata, 110
taxifolia, 111
taxifolia var. *crassifolia*, 106
urvilliana, 111
urvilliana var. *vitiensis*, 111
uvifera, 107
verticillata, 111
vesiculifera, 111
webbiana, 111
webbiana var. *pickeringii*, 111
cavernosa, Dictyosphaeria, 101
cavernosa, Ulva, 101
cavernosa var. *bullata*, Dictyosphaeria, 102
cenomyce, Hypnea, 48
cenomyce var. *tenuis*, Hypnea, 48
Centroceras, 54, 123
apiculatum, 54
clavulatum, 54
cryptacanthum, 54
hyalacanthum, 54
minutum, 54
Ceramiella, 54
procumbens, 54
Ceramium, 54, 123
affine, 54
byssoideum, 54, 55
clavulatum, 54
confervoides, 44
cruciatum, 54
diaphanum, 56
diaphanum var. *tenuissimum*, 56
equisetoides, 54
fastigiatum, 54
filamentosum, 49
fimbriatum, 55
flaccidum, 54
gracillimum, 55
gracillimum var. *byssoideum*, 54
loureiri, 55
luetzelburgii, 55
marshallense, 55
maryae, 55
masonii, 55
mazatlanense, 55
multijugum, 55
nitens, 55
ocellatum, 59
personatum, 55
procumbens, 54
rubrum var. *nitens*, 55
serpens, 55
sinicola, 55
taylorii, 56
tenerrimum, 56
tenuissimum, 56
vagabundum, 56
vagans, 56
zaca, 56
ceranoides f. *leprosa*, Liagora, 20
ceranoides, Liagora, 20
Ceratodictyon, 40
spongiosum, 40
cervicorne, Sargassum, 82
cervicornis, Desmia, 129
cervicornis, Dictyota, 75
cervicornis, Eupogodon, 130
cervicornis, Hypnea, 49
ceylanica, Dictyota, 75
ceylanica, Halymenia, 31
ceylanica, Halymenia *durvillaei* var., 31
ceylanica, Laurencia, 65
ceylanica, Sarcodia, 45
Chaetangium, 128
fastigiatum, 128
Chaetomorpha, 95, 125
aerea, 95
antennina, 95
brachygona, 95
clavata, 5
clavata var. *torta*, 97
crassa, 96
gracilis, 96
inflata, 96
kellersii, 96
ligustica, 96
linum, 96
media, 95
spiralis, 97
torta, 97
tortuosa, 96
chaetomorphoides, Enteromorpha, 91
Chamaedoris, 100
orientalis, 100
Champia, 53, 123
bifida, 53
caespitosa, 53
compressa, 53
disticha, 53
japonica, 53
parvula, 53
salicornoides, 53
spathulata, 53
vieillardii, 53
Chantransia hallandica, 19
charoides, Hypnea, 49
Chauvinia
clavifera, 107
macrophysa, 107
Cheilosporum, 34
cultratum, 34
jungermannioides, 34
sagittatum, 34
spectabile, 5
chemnitzia, *Caulerpa racemosa* var., 108
chemnitzia, Fucus, 108
chemnitzia var. *occidentalis*, *Caulerpa*, 108
cheyneana, Liagora, 21
cheyneana, Liagora *farinosa* var., 21
chilensis, Callophyllis, 32
Chlorocladus
australasicus, 120, 126
philippinensis, 120
Chlorodesmis, 118
caespitosa, 118
comosa, 118
fastigiata, 118
formosana, 118
hildebrandtii, 118
major, 118
torresiensis, 118
Chnoospora, 79
implexa, 79
minima, 79
pannosa, 80
Chondria, 62, 123
armata, 62
crassicaulis, 62
curvilineata, 62

- dasyphylla*, 63
glandulifera, 66
intricata, 66
obtusa var. *paniculata*, 67
obtusa var. *patentiramea*, 67
papillosa, 67
parvula, 53
patentiramea, 68
polyrhiza, 63
repens, 63
sedifolia, 63
seticulosa, 63
sibogae, 63
uvaria, 51
chondrioides, Laurencia, 65
Chondroclonium cornutum, 49
Chondrococcus, 129
 hornemannii, 39, 129
 japonicus, 39
 lambertii, 129
 spinulosus, 129
Chondrus, 123
 edulis, 47
Chromastrum, 127, 128
Chroodactylon, 17
 ornatum, 17
Chrysomenia, 123
 kuckuckii, 51
 pyriformis, 51
 skottsbergii, 51
 uvaria, 51
Chthonoblastus kurzii, 12
Chylocladia baileyana, 52
ciliolata, Dictyota, 75
cinctum var. *gracilentum*, Sargassum, 82
cinctum var. *mixtum*, Sargassum, 82
Cladocephalus, 125
Cladophora, 97, 125
 aegagropila, 5
 albida, 97
 anastomosans, 101
 aokii, 97
 catenata, 97
 coacta, 100
 conferta, 97
 crispula, 97
 crucigera, 97
 crystallina, 97
 cymopoliae, 97
 dalmatica, 97
 densa, 98
 fascicularis, 99
 filipendula, 97
 fuliginosa, 97
 heteronema, 98
 inserta, 98
 japonica, 98
 laetevirens, 98
 liebetruthii, 98
 mauritiana, 99
 pellucida, 98
 philippinensis, 98
 prolifera, 98
 quisumbingii, 98
 rudolphiana, 99
 rugulosa, 98
 rupestris, 98
 sakaii, 98
 sericea, 99
 sibogae, 99
 trichotoma, 98
 uncinata, 97
 vagabunda, 99
 wrightiana, 99
 zollingeri, 101
cladophorae, Ptilothamnion, 57
Cladophorae, *Spermothamnion*, 57
Cladophoropsis, 100, 125
 dichotoma, 100
 fasciculata, 100
 gracillima, 101
 membranacea, 101
 neocaledonica, 101
 philippinensis, 101
 sundanensis, 101
 vaucheriaeformis, 101
 zollingeri, 101
Cladosiphon frappieri, 20
clathrata, *Conserva*, 91
clathrata, *Enteromorpha*, 91
clathrata var. *crinita*, *Enteromorpha*, 93
clathratum, *Encoelium*, 80
clathratum, *Microdictyon*, 95
clathratus, *Fucus*, 80
clathratus, *Hydroclathrus*, 80
Claudea, 58
 batanensis, 58
 multifida, 58
clavata, *Acetabularia*, 121
clavata, *Chaetomorpha*, 5
clavata, *Giffordia*, 130
clavata, *Hincksia*, 130
clavata, Laurencia, 65
clavata var. *torta*, *Chaetomorpha*, 97
clavatium, *Gelidium*, 25
clavifer, *Fucus*, 106
clavifera, *Caulerpa*, 106
clavifera, *Caulerpa racemosa* var., 107
clavifera, *Chauvinia*, 107
clavifera f. *microphysa*, *Caulerpa racemosa* var., 106
clavifera var. *gracilis*, *Caulerpa*, 107
clavifera var. *turbinata*, *Caulerpa*, 108
clavigera, *Galaxaura*, 23
clavulatum, *Centroceras*, 54
clavulatum, *Ceramium*, 54
coacta, *Boodlea*, 100
coacta, *Cladophora*, 100
coacta, *Rhodymenia*, 52
coccinea, *Portieria*, 129
Coccochloris, 123
Codium, 111, 125
 adhaerens, 111, 112
 arabicum, 111
 bartlettii, 112
 contractum, 112
 coronatum, 111
 cylindricum, 112
 decorticatedum, 112
 dichotomum, 113
 difforme, 112
 divaricatum, 112
 edule, 112
 effusum, 112
 elongatum, 112
 fragile, 112
 geppii, 112, 113
 intricatum, 113
 muelleri, 113
 ovale, 113
 papillatum, 113
 platyclados, 113
 pugniforme, 113
 repens, 112
 setchellii, 112
 tenue, 113
 tomentosum, 113
Coelothrix, 52
 irregularis, 52
Colaonema, 127, 128
Colpomenia, 80, 125
 sinuosa, 80
columellaris, *Ectocarpus*, 73
columellaris, *Feldmannia*, 73
columellaris, Laurencia, 65
commersonii, *Padina*, 77
comoides, *Calothrix*, 8
comoides, *Hydrocoleum*, 8
comosa, *Chlorodesmis*, 118
compacta, *Caulerpa lentillifera* var., 106
compactum, *Sargassum*, 85
compactum, *Sargassum ilicifolium* var., 85
complanata, *Endocladia*, 27
complanata, *Gloiopeltis*, 27
composita, *Boodlea*, 100
composita, *Conserva*, 100
composita, Laurencia, 65
compressa, *Champia*, 53
compressa, *Enteromorpha*, 91
compressa, *Gracilaria*, 41
compressa, *Ulva*, 91, 93
compressus, *Sphaerococcus*, 41
conchicola, *Peyssonnelia*, 27
concinna, *Ahnfeltia*, 50
concinna, Laurencia, 64
condensata, *Roschera*, 71
condensata, *Tolypocladia*, 71
condensata, *Turbinaria*, 88
conferta, *Cladophora*, 97
conferta, *Entophysalis*, 7
conferta, *Grateloupia*, 30
conferta, *Grateloupia filicina* var., 30
conferta, *Palmella*, 7
Conserva
 aerea, 95
 aestuarii, 9
 albida, 97
 antennina, 95
 atropurpurea, 17
 catenata, 97
 clathrata, 91
 composita, 100
 conservicola, 13
 crassa, 96
 crinita, 93

- crystallina*, 97
daviesii, 128
fascicularis, 99
fastigiata, 54
flexuosa, 92
fuscopurpurea, 17
gracilis, 96
granulosa, 130
heteronema, 98
laetevirens, 98
ligustica, 96
linum, 96
majuscula, 8, 9
media, 95
membranacea, 101
ornata, 17
paradoxa, 92
pellucida, 98
prolifera, 98
riparia, 99
rudolphiana, 99
rupestris, 98
scopulorum, 14
sericea, 99
seticulosa, 63
simplex, 63
tortuosa, 96
trichotoma, 98
utricularis, 103
vagabunda, 99
confervicola, Calothrix, 13
confervicola, *Conferva*, 13
confervoides, *Ceramium*, 44
confervoides, *Fucus*, 44
confervoides, *Gracilaria*, 44
confervoides, Lyngbya, 9
confervoides, *Sphaerococcus*, 44
confervoides, *Valonia*, 102
confusum, *Sargassum*, 82
conoides, *Turbinaria*, 88
conoides, *Turbinaria vulgaris* var., 88
conoides f. *laticuspidata*, *Turbinaria*, 89
conoides f. *retroflexa*, *Turbinaria*, 89
conoides var. *evesiculosa*, *Turbinaria*, 90
constipata, *Galaxaura*, 23
contarenii, *Calothrix*, 13
contarenii, *Rivularia*, 13
contigua, *Galaxaura*, 22
contractum, *Codium*, 112
copiosa, *Halimeda*, 114
Corallina, 34, 123
anceps, 32
cubensis, 34
cylindrica, 23
decussato-dichotoma, 35
ephedraea, 32
flabellum, 119
fragilissima, 33
frondescens, 34
incrassata, 115
marginata, 23
oblongata, 23
obtusata, 24
opuntia, 115
pinnatifolia var. *digitata*, 34
rubens, 35
rugosa, 24
sagittata, 34
tenella, 35
tribulus, 33
tridens, 115
tuna, 116
ungulata, 35
ungulata f. *brevior*, 36
corallinae, *Leibleinia*, 11
corallinae, *Oscillatoria*, 11
corallopsis, *Laurencia*, 65
Corallopsis
minor, 43
opuntia, 41
salicornia, 43
salicornia var. *minor*, 43
corallopsis, *Sphaerococcus*, 65
cordata, *Halimeda*, 116
cordata, *Halimeda opuntia* f., 116
Cordylecladia irregularis, 52
Coriophyllum setchellii, 5
cornea, *Carpopeltis*, 31
cornea, *Grateloupia*, 31
cornea, *Prionitis*, 31
corneus var. *pulchellus*, *Fucus*, 25
cornuta, *Hypnea*, 49
cornuta var. *stellulifera*, *Hypnea*, 49
cornutum, *Chondroclonium*, 49
coronatum, *Codium*, 111
coronopifolia, *Gracilaria*, 41
coronopifolia, *Gracilaria lichenoides* f., 41
corticulans, *Bryopsis*, 103
corymbosa, *Gardnerula*, 14
corymbosus, *Microcoleus*, 14
corynephora, *Caulerpa*, 107
corynephora, *Caulerpa racemosa* var., 107
costata, *Delesseria plocamium* var., 44
costatum, *Plocamium*, 44
Cottoniella, 58
filamentosa, 58
cottonii, *Eucheuma*, 46
cottonii var. *erecta*, *Eucheuma*, 46
coulteri, *Gelidium*, 25
crassa, *Chaetomorpha*, 96
crassa, *Conferva*, 96
crassa, *Gracilaria*, 41
crassa, *Heterosiphonia*, 63
crassa, *Padina*, 78
crassicaulis, *Chondria*, 62
crassifolia, *Caulerpa*, 106
crassifolia, *Caulerpa taxifolia* var., 106
crassipellitum var. *robustum*, *Rhizoclonium*, 99
crassum, *Eucheuma*, 46
crenulata, *Acetabularia*, 121
crenulata, *Cryptonemia*, 29
crenulata, *Dictyota*, 75
crenulata, *Phyllophora*, 29
crinale, *Gelidium*, 25
crinale var. *perpusillum*, *Gelidium*, 25
crinalis, *Fucus*, 25
crinita, *Conferva*, 93
crinita, *Enteromorpha*, 93
crinita, *Enteromorpha clathrata* var., 93
crispa, *Lyngbya*, 9
crispata, *Carpopeltis*, 29
crispata, *Porphyra*, 18
crispifolium, *Sargassum*, 82
crispella, *Heterosiphonia*, 60
crispella var. *laxa*, *Heterosiphonia*, 60
crispula, *Cladophora*, 97
cristaeifolium, *Sargassum*, 83
cristata, *Lophosiphonia*, 69
cristatum, *Sargassum*, 82
crosbyanum, *Phormidium*, 11
Crouania, 56
attenuata, 56
minutissima, 56
cruciatum, *Ceramium*, 54
crucigera, *Cladophora*, 97
Cruoriella
dura, 28
foveolata, 28
indica, 28
lemoinei, 5
mariti, 28
crustacea, *Calothrix*, 13, 14, 15
crustiforme, *Eucheuma*, 46
cryptacanthum, *Centroceras*, 54
Cryptonemia, 29, 123
capitellata, 29
crenulata, 29
luxurians, 29
rigida, 29
schmitziana, 29
crystallina, *Cladophora*, 97
crystallina, *Conferva*, 97
cubense, *Halitilon*, 34
cubensis, *Corallina*, 34
cubensis, *Jania*, 34
cuculligera, *Galaxaura*, 24
cultrata, *Amphiroa*, 34
cultratum, *Cheilosporum*, 34
cumingii, *Amphiroa*, 32
cuneata, *Halimeda*, 114
cuneiformis, *Fucus*, 81, 131
cuneiformis, *Hormophysa*, 81, 131
cupressoides, *Caulerpa*, 104
cupressoides, *Fucus*, 104
cupressoides var. *disticha*, *Caulerpa*, 105
cupressoides var. *ericifolia*, *Caulerpa*, 105
cupressoides var. *lycopodium*, *Caulerpa*, 105
cupressoides var. *lycopodium* f. *amicorum*, *Caulerpa*, 105
cupressoides var. *lycopodium* f. *disticha*, *Caulerpa*, 105
cupressoides var. *lycopodium* f. *elegans*, *Caulerpa*, 105
cupressoidium, *Eucheuma*, 45
curtissiae, *Microdictyon*, 95
curviceps, *Oscillatoria*, 11
curvilineata, *Chondria*, 62
Cutleria, 74, 125
cylindrica, 74
cyathifera, *Amphiroa*, 33
cyathifera, *Amphiroa fragilissima* f., 33
cylindracea, *Halimeda*, 114
cylindrica, *Corallina*, 23

cylindrica, Cutleria, 74
cylindrica, *Galaxaura*, 23
cylindrica, Gracilaria, 41
cylindricum, Codium, 112
 Cymopolia, 120
 vanbosseae, 120
 cymopoliae, Cladophora, 97
 cystocarpum, Sargassum, 83
 Cystodictyon, 94
 leclancheri, 94
 Cystophyllum, 81
 hakodatense, 81
 sisymbrioides, 81
 trinode, 81
 turneri, 81
 cystophyllum, Sargassum, 83
cystophyllus, *Carpacanthus*, 83
 Cystoseira, 81, 125, 131
 articulata, 81, 131
 hakodatensis, 81
 prolifera, 81
 triquetra, 81, 131

dactyloides, Gracilaria, 52
dactyloides, Hymenocladia, 52
 dalmatica, Cladophora, 97
 damaecornis, Gracilaria, 41
 Dasya, 59
 adhaerens, 59
 baillouviana, 59
 delilei, 21, 22
 lallemandii, 69
 mollis, 59
 muelleri, 60
 ocellata, 59
 penicillata, 130
 plana, 129
 punicea, 59
 sessilis, 59
 spinella, 129
 wurdeemannii, 60
 Dasycladus, 120, 126
 australasicus, 120
 vermicularis, 120
Dasyopsis, 60, 123, 129
 anastomosans, 129
 antillarum, 60, 129
 aperta, 129
 geppii, 130
 palmatifida, 130
 pilosa, 60, 130
 pulchella, 130
 stanleyi, 130
 tenella, 130
 Dasyphila, 56
 plumarioides, 56
dasyphylla, Chondria, 63
dasyphyllus, *Fucus*, 63
daviesii, *Acrochaetium*, 128
daviesii var. *secundatum*, *Callithamnion*, 128
debilis, *Fucus*, 44
debilis, Gracilaria, 44
debilis, Polycavernosa, 44
decaisnei, *Mastophora*, 37

Decaisnella, 118
 indica, 119
decortcatum, *Codium*, 112
decumbens, Laurencia, 65
decumbens, Rhodymenia, 52
decurrens, Turbinaria, 89
decussato-dichotoma, *Corallina*, 35
decussato-dichotoma, Jania, 35
Delesseria
 adnata, 58
 filicina, 30
 leprieurii, 58
 plocamium var. *costata*, 44
 spathulata, 58
delicatula, Dictyopteris, 74
delicatula, Herposiphonia, 63
delicatula, Polysiphonia pacifica var., 70
delicatula, *Struvea*, 101
delilei, *Asparagopsis*, 21
delilei, *Dasya*, 21, 22
dendroidea, Herposiphonia, 64
dendroidea, Laurencia, 67
dendroidea, Laurencia obtusa var., 67
dendroidea var. *minor*, Herposiphonia, 64
dendroides, *Ochlochaete*, 91
dendroides, Phaeophila, 91
densa, Cladophora, 98
densa, Laurencia obtusa var., 67
densa, Pterocladia, 27
dentata, Acetabularia, 121
denticulata, Dictyota bartayresiana var., 75
denticulata, Gracilaria, 44
denticulata, Porphyra, 18
denticulatum, Eucheuma, 46
denticulatus, *Fucus*, 46, 86
denticulatus, *Sphaerococcus*, 44
denudata, Turbinaria, 89
depauperatum, Eucheuma muricatum f., 46
Derbesia, 104
 attenuata, 104
 marina, 104
 ryukyuensis, 104
 tenuissima, 104
Dermonema, 20
 frappieri, 20
Desmarestia, 128, 129
Desmia, 128, 129
 ambigua, 129
 cervicornis, 129
 dichotoma, 129
 harveyi, 129
 hornemannii, 39, 128, 129
 japonica, 39, 129
 kilneri, 129
 tripinnata, 129
diaphanum, *Ceramium*, 56
diaphanum var. *tenuissimum*, *Ceramium*, 56
Dichonema erectum, 117
Dichothrix, 14
 gypsophila, 14
dichotoma, Cladophoropsis, 100
dichotoma, *Desmia*, 129
dichotoma, Dictyota, 76

dichotoma, Grateloupia, 30
dichotoma, *Portieria*, 129
dichotoma, *Spongocladia*, 100
dichotoma, *Ulva*, 76
Dichotomosiphon pusillus, 117
dichotomum, *Codium*, 113
dichotomum, Eucheuma, 5
dichotomum, *Spongodendron*, 100
dickiei, *Lithothamnion*, 37
Dicranema, 123
Dictyerpa jamaicensis, 78
Dictyopteris, 74, 125
 camiguinensis, 74
 delicatula, 74
 divaricata, 74
 jamaicensis, 74
 membranacea, 74
 polypodioides, 74
 repens, 75
 undulata, 75
Dictyosphaeria, 101, 102, 126
 cavernosa, 101
 cavernosa var. *bullata*, 102
 favulosa, 102
 intermedia, 102
 ocellata, 102
 setchellii, 102
 vanbosseae, 102
 versluisii, 102
Dictyota, 75, 125
 atomaria, 76
 bartayresiana, 75
 bartayresiana var. *denticulata*, 75
 bartayresii, 75
 bidentata, 75
 cervicornis, 75
 ceylanica, 75
 ciliolata, 75
 crenulata, 75
 dichotoma, 76
 divaricata, 76
 friabilis, 76
 indica, 76
 lata, 76
 linearis, 76
 major, 76
 marginata, 77
 mertensii, 76
 patens, 77
 variegata, 77
 volubilis, 76
diesingiana? *Zonaria*, 79
difforme, *Codium*, 112
difformis, *Leathesia*, 79
difformis, *Tremella*, 79
Digenea, 63
 simplex, 63
digitata, *Corallina pinnatifolia* var., 34
dilatata, *Amphiroa*, 32
dilatata, *Halymenia*, 30
dilatatus, *Fucus*, 51
dilatatus, *Gymnogongrus*, 51
Dilophus, 77
 marginatus, 77
 okamurae, 77

- dimorpha*, *Galaxaura*, 23
Diploderma variegatum, 18
Diplotrichia polyotis, 15
discoidea f. *intermedia*, *Halimeda*, 114
discoidea f. *subdigitata*, *Halimeda*, 114
discoidea, *Halimeda*, 114
distenta, *Galaxaura*, 28
distenta, *Peyssonnelia*, 28
disticha, *Caulerpa cupressoides* var., 105
disticha, *Caulerpa cupressoides* var. *lycopodium* f., 105
disticha, *Champia*, 53
disticha, *Gracilaria*, 42
distichophylla, *Laurencia*, 66
distichus, *Sphaerococcus*, 42
distromatica, *Padina*, 78
divaricata, *Carpopeltis*, 29
divaricata, *Dictyopteris*, 74
divaricata, *Dictyota*, 76
divaricata, *Grateloupia*, 30
divaricata, *Haliseris*, 74
divaricata, *Hypnea*, 49
divaricata, *Liagora*, 20
divaricatum, *Codium*, 112
divaricatum, *Gelidium*, 25
divaricatus, *Fucus*, 49
divaricatus, *Gymnogongrus*, 51
divaricatus, *Sphaerococcus*, 49
doryphora, *Grateloupia*, 30
doryphora, *Halymenia*, 30
droserifolium, *Sargassum*, 83
droserifolium var. *spatulatum*, *Sargassum*, 83
duchassaingiana, *Giffordia*, 73
duchassaingiana, *Hinckia*, 73
duchassaingianus, *Ectocarpus*, 73
duperreyi, *Haloplegma*, 57
duplicatum, *Sargassum*, 83
duplicatum, *Sargassum ilicifolium* var., 83
duplicatum var. *rotundatum*, *Sargassum*, 83
dura, *Cruoriella*, 28
dura, *Polystrota*, 28
dura, *Rhabdonia*, 48
dura, *Solieria*, 48
durum, *Archaeolithothamnion erythraeum* f., 38
durum, *Sporolithon ptychoides* f., 38
durvillaei, *Halymenia*, 30
durvillaei var. *ceylanica*, *Halymenia*, 31
durvillaei var. *formosa*, *Halymenia*, 31
echinocarpum var. *vitiense*, *Sargassum*, 86
Ectocarpus, 125, 130
breviarticulatus, 73
columellaris, 73
duchassaingianus, 73
fenestratus, 130
formosanus, 73
fuscatus, 130
ghardagaensis, 130
hinckiae, 130
indicus, 73
irregularis, 73
mitchelliae, 73, 130
ovatus, 130
ovatus var. *intermedius*, 130
rallsiae, 73, 130
sandrianus, 130
saundersii, 130
secundus, 130
sordidus, 130
thyrsoides, 130
edule, *Codium*, 112
edule, *Eucheuma*, 47
edulis, *Chondrus*, 47
edulis, *Fucus*, 42, 44
edulis, *Gracilaria*, 42
effusum, *Codium*, 112
elegans, *Bangia*, 17
elegans, *Callithamnion*, 57
elegans, *Caulerpa cupressoides* var. *lycopodium* f., 105
elegans, *Caulerpa plumaris* var., 105
elegans, *Goniotrachum*, 17
elegans, *Gymnothamnion*, 57
elegans, *Microcladia*, 57
elongata, *Caulerpa*, 105
elongata, *Galaxaura*, 23, 24
elongatum, *Codium*, 112
elongatum, *Sargassum*, 83
Enantiocladia, 63
okamurae, 63
Encoelium
clathratum, 80
orientale, 80
Endocladia complanata, 27
Endosiphonia, 63
spinuligera, 63
enerve, *Sargassum*, 84
Enteromorpha, 91, 126
aragoensis, 91
chaetomorphoides, 91
clathrata, 91
clathrata var. *crinita*, 93
compressa, 91
crinita, 93
erecta, 92
flexuosa, 92
flexuosa f. *submarina*, 92
flexuosa subsp. *paradoxa*, 92
intermedia, 92
intestinalis, 92
intestinalis f. *tubulosa*, 92
intestinalis var. *tubulosa*, 92
kylinii, 92
lingulata, 93
plumosa, 92
prolifera, 93
ramulosa, 93
ramulosa var. *spinosa*, 93
salina, 93
spinescens, 93
tubulosa, 92
enteromorphoides, *Hormothamnium*, 8
Entophysalis, 7, 123
conferta, 7
ephedraea, *Amphiroa*, 32
ephedraea, *Corallina*, 32
epiphytica, *Calothrix*, 13
equisetoides, *Ceramium*, 54
erecta, *Amphiroa foliacea* f., 33
erecta, *Avrainvillea*, 117
erecta, *Enteromorpha*, 92
erecta, *Eucheuma cottonii* var., 46
erectum, *Dichonema*, 117
erectus, *Scytosiphon*, 92
ericifolia, *Caulerpa cupressoides* var., 105
ericifolius, *Fucus*, 105
Ernodesmis, 102
verticillata, 102
erubescens, *Lithothamnion*, 37
erubescens, *Mesophyllum*, 37
erythraea, *Oscillatoria*, 12
erythraeum, *Lithothamnion*, 38
erythraeum, *Sporolithon*, 38
erythraeum, *Trichodesmium*, 12
erythraeum f. *durum*, *Archaeolithothamnion*, 38
erythraeum f. *molle*, *Archaeolithothamnion*, 38
Erythrocladia, 17
irregularis, 17
pinnata, 17
subintegra, 17
Erythrocolon, 52
podagricum, 52
Erythrotrichia, 17, 123
bangioides, 17
biseriata, 17
parietalis, 17
eseptata, *Anadyomene*, 94
esperi, *Hypnea*, 49
esperi, *Hypnea musciformis* var., 49
esperi, *Sargassum*, 83
Eucheuma, 45, 123
alvarezii, 45
alvarezii var. *ajakii-assii*, 45
alvarezii var. *tambalangii*, 45
arnoldii, 45
arnoldii var. *alcyonida*, 45
cottonii, 46
cottonii var. *erecta*, 46
crassum, 46
crustiforme, 46
cupressoides, 45
denticulatum, 46
dichotomum, 5
edule, 47
gelatinum, 47
horridum, 47
isiforme, 47
leeuwenii, 47
muricatum, 46
muricatum f. *depauperatum*, 46
muricatum f. *incrassatum*, 47
okamurae, 47
procrusteanum, 47
serra, 47
spinosum, 46
striatum, 47
eucheumoides, *Gracilaria*, 42
Euhymenia limensis, 40
Eupogodon, 60, 123, 129
anastomosans, 129

antillarum, 60, 129
apertus, 129
apiculatus, 129
cervicornis, 130
geppii, 130
palmatifidus, 130
penicillatus, 130
pilosus, 60, 130
pinnatifolius, 130
planus, 130
pulchellus, 130
spinellus, 130
stanleyi, 130
tenellus, 130
euryphyllum, *Sargassum polycystum* var., 86
euryphyllum, *Sargassum myriocystum* var., 86
euae, *Peyssonnelia*, 28
evesiculosa, *Turbinaria conoides* var., 90
evesiculosa, *Turbinaria ornata* f., 90
exigua, *Acetabularia*, 121
Exophyllum, 63
 wentii, 63
expeditionis, *Tydemania*, 118

falcata, *Galaxaura*, 22
farinosa, *Fosliella*, 34
farinosa, *Liagora*, 20
farinosa, *Melobesia*, 34
farinosa var. *cheyneana*, *Liagora*, 21
farinosum, *Ganonema*, 21
farlowii, *Caulerpa sertularioides* f., 110
farlowii, *Caulerpa plumaris* f., 110
fasciata, *Ulva*, 93
fascicularis, *Cladophora*, 99
fascicularis, *Conserva*, 99
fasciculata, *Cladophoropsis*, 100
fasciculata, *Galaxaura*, 23
fasciculatus, *Siphonocladus*, 100
fastigiata, *Caulerpa*, 105
fastigiata, *Chlorodesmis*, 118
fastigiata, *Conserva*, 54
fastigiata, *Valonia*, 102
fastigiata, *Vaucheria*, 118
fastigiatum, *Ceramium*, 54
Fauchea, 52, 123
 leptophylla, 52
favulosa, *Dictyosphaeria*, 102
favulosa, *Valonia*, 102
Feldmannia, 73, 125
 columellaris, 73
 formosana, 73
 indica, 73
 irregularis, 73
fenestrata, *Hincksia*, 130
fenestratus, *Ectocarpus*, 130
fergusonii, *Caulerpa*, 105
ferruginea, *Lyngbya*, 9
ferulacea, *Polysiphonia*, 69
filamentosa, *Cottoniella*, 58
filamentosa, *Galaxaura*, 23
filamentosa, *Sarcomenia*, 58
filamentosa, *Spyridia*, 49, 57
filamentosa, *Turbinaria*, 89
filamentosum, *Ceramium*, 49

filamentosus, *Fucus*, 57
filicina, *Delesseria*, 30
filicina, *Grateloupia*, 30
filicina var. *conferta*, *Grateloupia*, 30
filicinum, *Sargassum*, 83
filicinus, *Fucus*, 30
filicoides, *Caulerpa*, 105
filifolium, *Sargassum*, 83
filifolium var. *aciculare*, *Sargassum*, 84
filiforme, *Sargassum*, 84
filipendula, *Cladophora*, 97
fimbriatum, *Ceramium*, 55
flabellata, *Anadyomene*, 95
flabellata, *Carpopeltis*, 29
flabellata, *Grateloupia*, 29
flabellata, *Zonaria*, 79
flabellatus, *Homoeostrichus*, 79
flabelliforme, *Stypopodium*, 79
flabelliformis, *Gymnogongrus*, 51
flabelliformis, *Martensia*, 59
flabellulata, *Polysiphonia*, 69
flabellum, *Corallina*, 119
flabellum, *Udotea*, 119
flaccidum, *Ceramium*, 54, 55
flaccidum, *Hormoceras*, 54
flagellata, *Caulerpa plumaris* f., 110
flagellata, *Caulerpa sertularioides* f., 110
flexuosa, *Conserva*, 92
flexuosa, *Enteromorpha*, 92
flexuosa, *Ulva*, 92
flexuosa f. *submarina*, *Enteromorpha*, 92
flexuosa subsp. *paradoxa*, *Enteromorpha*, 92
floresia, *Halymenia*, 31
floresius, *Fucus*, 31
fluitans, *Sargassum*, 84
fluitans, *Sargassum hystrix* var., 84
foliacea, *Amphiroa*, 33
foliacea, *Melobesia*, 37
foliacea f. *erecta*, *Amphiroa*, 33
foliifer, *Fucus*, 42
foliifera, *Gracilaria*, 42
foliifera f. *aeruginosa*, *Gracilaria*, 42
forbesii, *Boergesenia*, 100
forbesii, *Valonia*, 100
forcipata, *Polysiphonia*, 69
forfex, *Polysiphonia*, 69
formosa, *Halymenia*, 31
formosa, *Halymenia durvillaei* var., 31
formosana, *Carpopeltis*, 29
formosana, *Chlorodesmis*, 118
formosana, *Feldmannia*, 73
formosanus, *Ectocarpus*, 73
forsteri, *Fucus*, 66
forsteri, *Laurencia*, 66
Fosliella, 34
 farinosa, 34
foveolata, *Cruoriella*, 28
foveolata, *Peyssonnelia*, 28
fragile, *Acanthocodium*, 112
fragile, *Codium*, 112
fragilis, *Actinotrichia*, 22
fragilis, *Fucus*, 22
fragilis, *Halimeda*, 114
fragilis, *Polysiphonia*, 69

fragilissima, *Amphiroa*, 33
fragilissima, *Corallina*, 33
fragilissima f. *cyathifera*, *Amphiroa*, 33
frappieri, *Cladosiphon*, 20
frappieri, *Dermonema*, 20
fraseri, *Padina*, 78
fraseri, *Zonaria*, 78
fraxinifolia, *Neurymenia*, 69
fraxinifolius, *Fucus*, 69
freycinetii, *Caulerpa*, 109
freycinetii var. *boryana* f. *occidentalis*, *Caulerpa*, 109
freycinetii var. *pectinata*, *Caulerpa*, 109
freycinetii var. *typica* f. *lata*, *Caulerpa*, 109
freycinetii var. *typica* f. *spiralis*, *Caulerpa*, 109
friabilis, *Dictyota*, 76
friesii, *Schizothrix*, 12
frondescens, *Corallina*, 34
frutescens, *Goniolithon*, 38
frutescens, *Neogoniolithon*, 38
fruticulosa, *Galaxaura*, 24
fruticulosum, *Lithothamnion*, 37
Fucus
 abrotanifolius, 26
 abscissus, 129
 acanthophorus, 61
 acerosus, 25
 aeruginosus, 42
 amansii, 25
 articulatus, 81, 131
 atomarius, 76
 bacciferus, 86
 baccularia, 82
 baillouviana, 59
 botryocarpus, 58
 botryoides, 51
 bursa-pastoris, 41
 capensis, 26
 capillaceus, 27
 cartilagineus, 26
 chemnitzia, 108
 clathratus, 80
 clavifer, 106
 conservoides, 44
 corneus var. *pulchellus*, 25
 crinalis, 25
 cuneiformis, 81, 131
 cupressoides, 104
 dasyphyllus, 63
 debilis, 44
 denticulatus, 46, 86
 dilatatus, 51
 divaricatus, 49
 edulis, 42, 44
 ericifolius, 105
 filamentosus, 57
 filicinus, 30
 floresius, 31
 foliifer, 42
 forsteri, 66
 fragilis, 22
 fraxinifolius, 69
 fulvellus, 84
 fungiformis, 73

- gelatinus*, 47
glandulosus, 57
gulaman, 44
hamulosus, 50
hemiphyllus, 84
hornemanni, 128
ilicifolius, 85
lacinulatus, 42
lambertii, 129
lamourouxii, 107
latifolius, 85
lichenoides, 42
membranaceus, 74
miniatus, 72
minimus, 79
muricatus, 46
musciiformis, 49
muscoideus, 60
myagroides, 81
natans, 86
nootkanus, 50
obtusus, 66
opuntia, 48
ornatus, 128
palmaris, 19
papillosus, 67
parvifolius, 87
pavonicus, 78
pavonius, 78
pilulifer, 87
plumaris, 110
poitei, 68
polypodioides, 74, 75
prolifer, 106, 115, 116
pusillus, 25
racemosus, 106
rigidus, 25
salicifolius, 88
selago, 108
serratifolius, 87
serrulatus, 108
sertularioides, 109, 110
sisymbrioides, 81
spiciferus, 60
spiniformis, 25
spinosus, 46
squamarius, 28
taxifolius, 111
taxiformis, 21, 22
tenax, 27
tenellus, 62
triangularis, 131
trifarius, 130
triqueter, 81, 131
turbinatus, 90
turbinatus var. *ornatus*, 89
uvifer, 107
valentiae, 50
verrucosus, 44
versicolor, 26
fuliginosa, *Cladophora*, 97
fulvillum, *Sargassum*, 84
fulvellus, *Fucus*, 84
fungiformis, *Fucus*, 73
fungiformis, *Ralfsia*, 73
furcatum, *Sargassum*, 84
furcellata, *Ahnfeltia*, 51
furcigera, *Sphacelaria*, 74
fuscata, *Hinckia*, 130
fuscatus, *Ectocarpus*, 130
fuscopurpurea, *Bangia*, 18
fuscopurpurea, *Conferva*, 17
Galaxaura, 22, 123
acuminata, 22
apiculata, 22
arborea, 22
clavigera, 23
constipata, 23
contigua, 22
cuculligera, 24
cylindrica, 23
dimorpha, 23
distenta, 28
elongata, 23, 24
falcata, 22
fasciculata, 23
filamentosa, 23
fruticulosa, 24
glabriuscula, 24
kjellmanii, 23
lapidescens, 23
marginata, 23
oblongata, 23
obtusata, 24
pacifica, 24
rigida, 22
robusta, 24
rudis, 23
rugosa, 24
sibogae, 5
squalida, 24
striata, 24
subfruticulosa, 24
subverticillata, 24
tenera, 23
umbellata, 24
veprecula, 23
Ganonema, 21
farinosum, 21
Gardnerula, 14
corymbosa, 14
Gastridium ovale, 104
gaudichaudii, *Carpacanthus*, 84
gaudichaudii, *Sargassum*, 84
gelatinae, *Euclima*, 46
gelatinosa, *Gigartina*, 47
gelatinum, *Euclima*, 47
gelatinus, *Fucus*, 47
gelatinus, *Sphaerococcus*, 44, 47
Gelidiella, 25, 124
acerosa, 25
adnata, 25
taylorii, 25
Gelidiopsis, 40, 124
intricata, 40
repens, 40
rigida, 25
variabilis, 40
Gelidium, 25, 124
amansii, 25
anthonii, 5
caloglossoides, 27
capense, 26
cartilagineum, 26
clavatum, 25
coulteri, 25
crinale, 25
crinale var. *perpusillum*, 25
divaricatum, 25
isabellae, 25
kintaroi, 25
pulchellum, 25
pusillum, 25
pusillum var. *pacificum*, 27
repens, 40
rigens, 27
rigidum, 25
spiniforme, 25
variabile, 40
geppii, *Codium*, 112, 113
geppii, *Dasyopsis*, 130
geppii, *Eupogon*, 130
geppii, *Udotea*, 119
Geppina, 118
ghardaqaensis, *Ectocarpus*, 130
ghardaqaensis, *Hinckia*, 130
Giffordia, 73
andamanensis, 130
bhimlipatnamensis, 130
duchassaingiana, 73
clavata, 130
hinckiae var. *californica*, 130
mittelliae var. *neilii*, 130
onslowensis, 130
prolifera, 130
rallsiae, 73
terminalis, 130
gigantea, *Ulva*, 94
giganteifolium, *Sargassum*, 84
Gigartina, 51
affinis, 28
gelatinosa, 47
lichenoides, 42
prolifera, 29
tenella, 51
gigas, *Gracilaria*, 42
gigas, *Halimeda*, 114
glabriuscula, *Galaxaura*, 24
glandulifera, *Chondria*, 66
glandulifera, *Laurencia*, 66
glandulosa, *Microcladia*, 57
glandulosus, *Fucus*, 57
glaucescens, *Udotea*, 119
globuliferum, *Pleonosporium*, 57
Gloeotrichia, 123
Gloiocladia, 52
ramellifera, 52
Gloiopeltis, 27
complanata, 27
tenax, 27
glomerata, *Amansia*, 61
glomerulata, *Hutchinsia*, 71
glomerulata, *Tolypocladia*, 71
glutinosa, *Lyngbya*, 8

glutinosum, Hydrocoleum, 8

Goniolithon

frutescens, 38

megalocystum, 38

reinboldii, 34

Goniotrichum, 17

alsidii, 17

elegans, 17

Gordonella, 56

yonakuniensis, 56

gorgoniae, Polysiphonia, 69

Gracilaria, 40, 124

andersonii, 43

arcuata, 40

arcuata var. *snackeyi*, 41

blodgettii, 41

bursa-pastoris, 41

canaliculata, 41

compressa, 41

confervoides, 44

coronopifolia, 41

crassa, 41

cylindrica, 41

dactyloides, 52

damaecornis, 41

debilis, 44

denticulata, 44

disticha, 42

edulis, 42

eucheumoides, 42

foliifera, 42

foliifera f. *aeruginosa*, 42

gigas, 42

incurvata, 43

lacinulata, 42

lichenoides, 42

lichenoides f. *coronopifolia*, 41

minor, 43

multipartita var. *aeruginosa*, 42

papenfussii, 43

purpurascens, 43

salicornia, 43

spinigera, 43

spinulosa, 43

textorii, 43

turgida, 43

venezuelensis, 44

verrucosa, 44, 123

vieillardii, 44

gracile, *Acrochaetium*, 18

gracile, *Sargassum*, 84

gracilentum, *Sargassum cinctum* var., 82

gracilis, *Caulerpa clavifera* var., 107

gracilis, *Caulerpa racemosa* var., 107

gracilis, *Chaetomorpha*, 96

gracilis, *Conserva*, 96

gracilis, *Halimeda*, 114

gracilis, *Leveillea*, 68

gracilis, *Rhodopeltis*, 39

gracillima, *Cladophoropsis*, 101

gracillimum, *Ceramium*, 55

gracillimum, *Hormoceras*, 55

gracillimum var. *byssoideum*, *Ceramium*, 54

grande, *Rhizoclonium*, 99

granuliferum, *Sargassum*, 84

granulosa, *Conserva*, 130

granulosa, *Hincksia*, 130

Grateloupia, 30, 124

acuminata, 30

californica, 30

conferta, 30

cornea, 31

dichotoma, 30

divaricata, 30

doryphora, 30

filicina, 30

filicina var. *conferta*, 30

flabellata, 29

ramosissima, 30

grevilleana, *Laurencia*, 65

Griffithsia, 56, 124

argus, 57

ovalis, 56

penicillata, 57

rhizophora, 56

tenuis, 53

gulaman, *Fucus*, 44

Gymnogongrus, 51, 124

dilatatus, 51

divaricatus, 51

flabelliformis, 51

ligulatus var. *angustus*, 28

pygmaeus, 51

Gymnosorus variegatus, 77

gymnospora, *Padina*, 77, 78

gymnospora, *Zonaria*, 77, 78

Gymnothamnion, 57

elegans, 57

gypsophila, *Dichothrix*, 14

gypsophilus, *Schizosiphon*, 14

hakodatense, *Cystophyllum*, 81

hakodatensis, *Cystoseira*, 81

hakodatensis, *Lomentaria*, 52

Halicoryne, 122

wrightii, 122

Halicystis

ovalis, 104

parvula, 104

Halimeda, 114, 126

batanensis, 116

bikinensis, 114

copiosa, 114

cordata, 116

cuneata, 114

cylindracea, 114

discoidea, 114

discoidea f. *intermedia*, 114

discoidea f. *subdigitata*, 114

fragilis, 114

gigas, 114

gracilis, 114

hederacea, 114

incrassata, 115

incrassata f. *lamourouxii*, 115

lacunalis, 115

macroloba, 115

macrophysa, 115

micronesica, 115

monile, 114

opuntia, 115

opuntia f. *cordata*, 116

opuntia f. *hederacea*, 114

opuntia f. *intermedia*, 116

opuntia f. *renschii*, 116

opuntia f. *triloba*, 116

opuntia var. *hederacea*, 114

orientalis, 115

platydisca, 116

renschii, 116

simulans, 116

stuposa, 116

taenicola, 116

tridens, 115

tridens f. *lamourouxii*, 115

triloba, 115

tuna, 116

tuna f. *platydisca*, 116

velasquezii, 116

velasquezii var. *robusta*, 116

Haliptilon, 34

cubense, 34

Haliseris

divaricata, 74

repens, 75

hallandica, *Chantransia*, 19

hallandicum, *Acrochaetium*, 19

Halochloa schizophylla, 87

Haloplegma, 57

duperreyi, 57

Halymenia, 30, 124

acuminata, 30

ceylanica, 31

dilatata, 30

doryphora, 30

durvillaei, 30

durvillaei var. *ceylanica*, 31

durvillaei var. *formosa*, 31

floresia, 31

formosa, 31

harveyana, 31

incrassata, 40

japonica, 31

maculata, 31

microcarpa, 31

hamulosa, *Hypnea*, 50

hamulosus, *Fucus*, 50

hancockii, *Acrochaetium*, 19

hancockii, *Amphiroa*, 33

hancockii, *Rhodochorton*, 19

harveyana, *Halymenia*, 31

harveyi, *Desmida*, 129

harveyi, *Portieria*, 129

hawaiiiana, *Liagora*, 21

hawaiiensis, *Polysiphonia*, 70

hederacea, *Halimeda*, 114

hederacea, *Halimeda opuntia* f., 114

hederacea, *Halimeda opuntia* var., 114

helminthochortos, *Alsidium*, 95

Helminthocladia, 20

australis, 20

schrammi, 20

hemiphyllum, *Sargassum*, 84

hemiphyllus, *Fucus*, 84

hemiphyllus, *Spongocarpus*, 85

- Herbacea*, 128
Herposiphonia, 63, 124
 crassa, 63
 delicatula, 63
 dendroidea, 64
 dendroidea var. *minor*, 64
 nuda, 64
 obscura, 64
 pacifica, 64
 parca, 64
 plumula, 64
 prorrepens, 5
 secunda, 64
 secunda f. *tenella*, 64
 subdisticha, 64
 tenella, 64
 tenella f. *secunda*, 64
 trichia, 64
Heteractis mesenterica, 14
heterocystum, *Sargassum*, 85
Heteroderma, 124
heteronema, *Cladophora*, 98
heteronema, *Conserua*, 98
Heterosiphonia, 60
 crispella, 60
 crispella var. *laxa*, 60
 muelleri, 60
 wurdeemannii, 60
 wurdeemannii var. *laxa*, 60
hildebrandtii, *Chlorodesmis*, 118
Hinckesia, 73
 andamanensis, 130
 bhimlipatnamensis, 130
 breviarticulata, 73
 clavata, 130
 fenestrata, 130
 fuscata, 130
 ghardaqensis, 130
 granulosa, 130
 hinckesiae, 130
 hinckesiae var. *californica*, 130
 intermedia, 130
 mittchelliae, 73, 130
 mittchelliae var. *neilii*, 130
 onslowensis, 130
 ovata, 130
 prolifera, 130
 rallsiae, 73, 130
 ramulosa, 130
 sandriana, 130
 saundersii, 130
 secunda, 130
 sordida, 130
 terminalis, 130
 thyrsoides, 130
hinckesiae, *Ectocarpus*, 130
hinckesiae, *Hinckesia*, 130
hinckesiae var. *californica*, *Giffordia*, 130
hinckesiae var. *californica*, *Hinckesia*, 130
Hippurina, 128
hippuroides, *Hypnea*, 50
hippuroides, *Hypnea musciformis* var., 50
hoffman-bangii, *Scytonema*, 15
hofman-bangii, *Scytonema*, 15
hofmannii, *Scytonema*, 15
hofmannii, *Scytonema*, 14
hombronianum var. *manilense*, *Sargassum*, 85
Homoeostrichus flabellatus, 79
hookeri, *Caloglossa lepreurii* var., 58
hookeri, *Rhizoclonium*, 99
Hormoceras
 flaccidum, 54
 gracillimum, 55
 tenerrimum, 56
hormoides, *Scinaia*, 25
Hormophysa, 81, 125
cuneiformis, 81, 131
triquetra, 81, 130
Hormothamnium, 8, 123
 enteromorphoides, 8
 solutum, 8
hornemannii, *Chondrococcus*, 39, 129
hornemannii, *Desmia*, 39, 128, 129
hornemannii, *Fucus*, 128
hornemannii, *Portieria*, 39, 129
horridum, *Eucheuma*, 47
howei, *Polysiphonia*, 70
howei, *Symploca*, 13
Howella, 118
humii, *Caulerpa*, 109
Hutchinsia
 glomerulata, 71
 pericladus, 69
 secunda, 64
 tenella, 64
hyalacanthum, *Centroceras*, 54
hydroides, *Calothrix*, 13
hydroides, *Symploca*, 13
Hydroclathrus, 80, 125
 cancellatus, 80
 clathratus, 80
 orientalis, 80
Hydrocoleum, 8
 cantharidosmum, 8
 comoides, 8
 glutinosum, 8
 lyngbyaceum, 9
Hydrolithon, 34
 reinboldii, 34
Hymenocladia, 52
 dactyloides, 52
Hypnea, 48, 124
 boergesenii, 48
 cenomyce, 48
 cenomyce var. *tenuis*, 48
 cervicornis, 49
 charoides, 49
 cornuta, 49
 cornuta var. *stellulifera*, 49
 divaricata, 49
 esperii, 49
 hamulosa, 50
 hippuroides, 50
 musciformis, 49
 musciformis var. *esperii*, 49
 musciformis var. *hippuroides*, 50
 nidulans, 50
 nigrescens, 50
 pannosa, 50
 saidana, 50
 spinella, 50
 valentiae, 50
Hypoglossum, 58
 attenuatum, 58
 serrulatum, 58
 spathulatum, 58
hystrix, *Sargassum*, 85
hystrix var. *fluitans*, *Sargassum*, 84
hystrix var. *spinulosus*, *Sargassum*, 85
ilicifolium, *Sargassum*, 85
ilicifolium f. *benkulense*, *Sargassum*, 85
ilicifolium var. *compactum*, *Sargassum*, 85
ilicifolium var. *duplicatum*, *Sargassum*, 83
ilicifolium var. *pseudospinosum*, *Sargassum*, 85
ilicifolius, *Carpacanthus*, 85
ilicifolius, *Fucus*, 85
imbricatum, *Lithothamnion*, 37
imbricatum, *Mesophyllum*, 37
implexa, *Chnoospora*, 79
implicata, *Laurencia*, 66
impudica, *Catenella*, 48
impudica, *Lomentaria*, 48
incrassata, *Corallina*, 115
incrassata, *Halimeda*, 115
incrassata f. *lamourouxii*, *Halimeda*, 115
incrassatum, *Eucheuma muricatum* f., 47
incrustans, *Halymenia*, 40
incrustans, *Titanophora*, 40
incurvata, *Gracilaria*, 43
indica, *Bryopsis*, 103
indica, *Cruoriella*, 28
indica, *Decaisnella*, 119
indica, *Dictyota*, 76
indica, *Feldmannia*, 73
indica, *Litholepis*, 36
indica, *Lithoporella*, 36
indica, *Peyssonnelia*, 28
indica, *Udotea*, 119
indica f. *philippinensis*, *Litholepis*, 36
indicum, *Sargassum vulgare* var., 88
indicum f. *subtile*, *Lithothamnion*, 37
indicus, *Ectocarpus*, 73
inermis, *Bostrychia mixta* f., 62
infixa, *Lyngbya*, 9
inflata, *Chaetomorpha*, 96
inserta, *Cladophora*, 98
intermedia, *Dictyosphaeria*, 102
intermedia, *Enteromorpha*, 92
intermedia, *Halimeda discoidea* f., 114
intermedia, *Halimeda opuntia* f., 116
intermedia, *Hinckesia*, 130
intermedia, *Laurencia*, 66
intermedius, *Ectocarpus ovatus* var., 130
intestinalis, *Enteromorpha*, 92
intestinalis, *Ulva*, 92
intestinalis f. *tubulosa*, *Enteromorpha*, 92
intestinalis var. *tubulosa*, *Enteromorpha*, 92
intricata, *Bostrychia*, 61
intricata, *Chondria*, 66
intricata, *Gelidiopsis*, 40
intricata, *Laurencia*, 66
intricata, *Phyllophora*, 52

intricata, Rhodymenia, 52
 intricata, Rosenvingea, 80
 intricatum, Codium, 113
intricatum, Scytonema, 61, 62
intricatus, Asperococcus, 80
intricatus, Sphaerococcus, 40
 irregularis, Coelothrix, 52
irregularis, Cordylecladia, 52
irregularis, Ectocarpus, 73
 irregularis, Erythrocladia, 17
 irregularis, Feldmannia, 73
 isabelae, Gelidium, 25
 isiforme, Eucheuma, 47
isiformis, Sphaerococcus, 47

jamaicensis, Dictyera, 78
jamaicensis, Dictyopteris, 74
jamaicensis, Padina, 78
 Jania, 34, 124
 adhaerens, 34
 capillacea, 35
 cubensis, 34
 decussato-dichotoma, 35
 longiarthra, 35
 mexicana, 35
 micrarthodia, 35
 pacifica, 35
 pumila, 35
 rubens, 35
 tenella, 35
 tenella var. *zaca*e, 35
 tenuissima, 35
 ungulata, 35
 ungulata f. *brevior*, 36
japonica, Callophyllis, 32
japonica, Champia, 53
japonica, Cladophora, 98
japonica, Desmia, 39, 129
japonica, Halymenia, 31
japonica, Laurencia, 66
japonica, Liagora, 21
japonica, Padina, 78
japonica, Portieria, 39, 129
japonica, Pugetia, 32
japonicum, Microdictyon, 95
japonicus, Chondrococcus, 39
javensis, Rhipidosiphon, 119
javensis, Udotea, 119
*jungermannii*oide, Amsia, 68
*jungermannii*oide, Cheilosporum, 34
*jungermannii*oide, Leveillea, 68
*jungermannii*oide, Polyzonia, 68

Kallymenia, 32, 124
 californica, 32
 callophyllloides, 32
 pacifica, 32
 papulosa, 48
 sessilis, 32
 kelanensis, Bostrychia, 62
 kellersii, Chaetomorpha, 96
 kernerii, Rhizoclonium, 99
kilneri, Desmia, 129
kilneri, Portieria, 129
 kintaroii, Gelidium, 25

kjellmanianum, Sargassum, 86
kjellmanii, Galaxaura, 23
 kochianum, Rhizoclonium, 99
kuckuckii, Botryocladia, 51
kuckuckii, Chrysomenia, 51
kurzii, Chthonoblastus, 12
kurzii, Porphyrosiphon, 12
kurzii, Sirocoleum, 12
Kylinia rosulata, 19
 kyllinii, Enteromorpha, 92

lacerata, Avrainvillea, 117
lacerata var. *robustior*, Avrainvillea, 117
lacinulata, Gracilaria, 42
lacinulatus, Fucus, 42
 lactuca, Ulva, 93
lactuca var. *latissima*, Ulva, 93
lactuca var. *luxurians*, Sphaerococcus, 29
lactuca var. *rigida*, Ulva, 94
 lacunalis, Halimeda, 115
 lacunosa, Rhodophyllis peltata var., 48
laetevirens, Caulerpa, 107
laetevirens, Caulerpa racemosa var., 107
laetevirens, Cladophora, 98
laetevirens, Conferva, 98
laeteviridis, Symploca, 13
lallemandii, Dasya, 69
lallemandii, Lophocladia, 69
lambertii, Chondrococcus, 129
lambertii, Fucus, 129
Laminaria saccharina, 94
lamourouxii, Caulerpa racemosa var., 107
lamourouxii, Fucus, 107
lamourouxii, Halimeda incrassata f., 115
lamourouxii, Halimeda tridens f., 115
lapidescens, Galaxaura, 23
lata, Caulerpa freycinetii var. *typica* f., 109
lata, Caulerpa serrulata f., 109
lata, Dictyota, 76
 laticuspidata, Turbinaria conoides f., 89
 latifolium, Sargassum, 85
latifolius, Fucus, 85
 latifrons, Scinaia, 25
 latissima, Ulva, 93
latissima, Ulva *lactuca* var., 93
 latissimum, Monostroma, 91
 Laurencia, 64, 124
 brongniartii, 64
 capituliformis, 65
 caraibica, 65
 carolinensis, 65
 cartilaginea, 65
 ceylanica, 65
 chondrioides, 65
 clavata, 65
 columellaris, 65
 composita, 65
 concinna, 64
 corallopsis, 65
 decumbens, 65
 dendroidea, 67
 distichophylla, 66
 forsteri, 66
 glandulifera, 66
 grevilleana, 65

implicata, 66
intermedia, 66
intricata, 66
japonica, 66
majuscula, 66
mariannensis, 66
nana, 65
nidifica, 66
obtusa, 66
obtusa var. *dendroidea*, 67
obtusa var. *densa*, 67
obtusa var. *majuscula*, 66
obtusa var. *snackeyi*, 67
okamurae, 67
palisada, 67
paniculata, 67
paniculata var. *snackeyi*, 67
papillosa, 67
parvipapillata, 67
patentiramea, 67
pinnata, 68
pinnatifida, 5
poiteaui, 68
seticulosa, 63
subsimplex, 68
surculigera, 68
tronoii, 68
tropica, 68
undulata, 68
venusta, 68
yamadana, 68

laxa, Heterosiphonia crispella var., 60
laxa, Heterosiphonia wurdemannii var., 60
laysanense, Phormidium, 12
 Leathesia, 79
 difformis, 79
leclancheri, Anadyomene, 94
leclancheri, Cystodictyon, 94
leeuwenii, Eucheuma, 47

Leibleinia
 aeruginea, 13
 capillacea, 10
 corallinae, 11
 polychroa, 10
 sordida, 10
 violacea, 10
lemoinei, Cruoriella, 5
lentillifera, Caulerpa, 105
lentillifera var. *compacta*, Caulerpa, 106
lentillifera var. *longistipitata*, Caulerpa, 106
leprieurii, Caloglossa, 58
leprieurii, Delesseria, 58
leprieurii var. *hookeri*, Caloglossa, 58
leprosa, Liagora, 20
leprosa, Liagora ceranoides f., 20
Leptofauchea, 124
leptophylla, Fauchea, 52
Leptothrix valderiae, 12
lessonii, Caulerpa, 106
 Leveillea, 68
 gracilis, 68
 *jungermannii*oide, 68
levis, Avrainvillea, 117
lherminieri, Antithamnion, 53
 Liagora, 20, 124

- boergesenii*, 20
caenomyce, 20
canariensis, 20
ceranoides, 20
ceranoides f. *leprosa*, 20
cheyneana, 21
divaricata, 20
farinosa, 20
farinosa var. *cheyneana*, 21
hawaiiiana, 21
japonica, 21
leprosa, 20
orientalis, 21
pulverentula, 5
robusta, 21
segawae, 21
setchellii, 21
tenuis, 21
valida, 21
liagorae, *Acrochaetium*, 19
Liagoropsis, 20
schrammii, 20
licheniformis, *Mastophora*, 37
lichenoides, *Fucus*, 42
lichenoides, *Gigartina*, 42
lichenoides, *Gracilaria*, 42
lichenoides, *Sphaerococcus*, 42, 44
lichenoides f. *coronopifolia*, *Gracilaria*, 41
liebetruithii, *Cladophora*, 98
ligulatus var. *angustus*, *Gymnogongrus*, 28
ligustica, *Chaetomorpha*, 96
ligustica, *Conferva*, 96
limensis, *Euhymenia*, 40
limensis, *Sebdenia*, 40
linearis, *Dictyota*, 76
linearis, *Zonaria*, 76
lingulata, *Enteromorpha*, 93
linum, *Chaetomorpha*, 96
linum, *Conferva*, 96
Litholepis
indica, 36
indica f. *philippinensis*, 36
Lithophyllum, 36, 124
byssoides, 36
moluccense, 36
okamurae, 36
onkodes, 38
pallascens, 36
reinboldii, 34
Lithoporella, 36
indica, 36
melobesioides, 36
Lithothamnion, 36
australe f. *brachiatum*, 36
australe f. *minutulum*, 37
australe f. *ubianum*, 37
byssoides, 36
calcareum, 38
dickiei, 37
erubescens, 37
erythraeum, 38
fruticulosum, 37
imbricatum, 37
indicum f. *subtile*, 37
moluccense, 36
muelleri, 36
onkodes, 38
pallascens, 36
polymorphum, 37, 38
pulchrum, 37
purpureum, 38
siamense, 37
siamense f. *simulans*, 38
simulans, 38
Lithothamnium, 36
Lobophora, 77
variegata, 77
Lola, 96
Lomentaria, 124, 52
articulata, 52
baileyana, 52
hakodatensis, 52
impudica, 48
pinnata, 52
longiarthra, *Jania*, 35
longicaulis, *Avrainvillea*, 117
longicaulis, *Rhipilia*, 117
longifolia, *Caulerpa serrulata* var. *boryana* f., 109
longipes, *Caulerpa plumaris* var., 110
longipes, *Caulerpa sertularioides* f., 110
longiseta, *Caulerpa plumaris* var., 110
longiseta, *Caulerpa sertularioides* f., 110
longistipitata, *Caulerpa lentillifera* var., 106
Lophocladia, 69
lallemandii, 69
Lophosiphonia, 69, 124
cristata, 69
sparsa, 70
Lophura armata, 62
loureiri, *Ceramium*, 55
luetzelburgii, *Ceramium*, 55
lutea, *Lyngbya*, 9
lutea, *Oscillatoria*, 9
luteofusca, *Calothrix*, 10
luxurians, *Cryptonemia*, 29
luxurians, *Sphaerococcus lactuca* var., 29
luzonense, *Sargassum microcystum* f., 85
luzonensis, *Peyssonnelia*, 28
luzonensis, *Turbinaria*, 89
lycopodium, *Caulerpa*, 105
lycopodium, *Caulerpa cupressoides* var., 105
lycopodium f. *amicorum*, *Caulerpa cupressoides* var., 105
lycopodium f. *disticha*, *Caulerpa cupressoides* var., 105
lycopodium f. *elegans*, *Caulerpa cupressoides* var., 105
Lyngbya, 9, 123
aestuarii, 9
cantharidosma, 8
confervoides, 9
crispa, 9
ferruginea, 9
glutinosa, 8
infixa, 9
lutea, 9
majuscula, 9, 12
martensiana, 10
mesotricha, 10
persicina, 12
rosea, 10
sempilena, 10
sordida, 10, 12
lyngbyaceum, *Hydrocoleum*, 9
lyngbyaceus, *Microcoleus*, 8, 9, 10, 11
macra, *Caulerpa racemosa* var., 107
macrocarpa, *Mastophora*, 5
macrodisca, *Caulerpa*, 108
macrodisca, *Caulerpa peltata* var., 108
macroloba, *Halimeda*, 115
macrophysa, *Caulerpa racemosa* var., 107
macrophysa, *Chauvinia*, 107
macrophysa, *Halimeda*, 115
macrophysa, *Valonia*, 103
maculans, *Brachytrichia*, 15
maculata, *Halymenia*, 31
maillardii, *Carpopeltis*, 29
maillardii, *Phyllophora*, 29
major, *Acetabularia*, 121
major, *Chlorodesmis*, 118
major, *Dictyota*, 76
major, *Spirulina*, 12
majuscula, *Conferva*, 8, 9
majuscula, *Laurencia*, 66
majuscula, *Laurencia obtusa* var., 66
majuscula, *Lyngbya*, 9, 12
manilense, *Sargassum hombronianum* var., 85
manilense, *Sargassum polycystum* var., 85
manipaeense, *Sargassum siliquosum* var., 88
marcosii, *Porphyra*, 18
margaritifera, *Oscillatoria*, 11
margaritifera, *Oscillatoria*, 11
marginata, *Corallina*, 23
marginata, *Dictyota*, 77
marginata, *Galaxaura*, 23
marginatus, *Dilophus*, 77
mariannensis, *Laurencia*, 66
marina, *Derbesia*, 104
marina, *Vaucheria*, 104
mariti, *Cruoriella*, 28
mariti, *Peyssonnelia*, 28
marshallense, *Ceramium*, 55
Martensia, 59, 124
flabelliformis, 59
speciosa, 59
martensiana, *Lyngbya*, 10
martensii, *Opephyllum*, 59
maryae, *Ceramium*, 55
masonii, *Ceramium*, 55
Mastophora, 37
decaisnei, 37
licheniformis, 37
macrocarpa, 5
melobesioides, 36
rosea, 37
mauritiana, *Cladophora*, 99
mazatlanense, *Ceramium*, 55
media, *Chaetomorpha*, 95
media, *Conferva*, 95
mediterranea, *Spongopsis*, 96

- megalocystum*, *Goniolithon*, 38
megalocystum, *Neogoniolithon*, 38
Melanthalia, 129
Melobesia, 124
farinosa, 34
foliacea, 37
melobesioides, *Lithoporella*, 36
melobesioides, *Mastophora*, 36
membranacea, *Cladophoropsis*, 101
membranacea, *Conferva*, 101
membranacea, *Dictyopteris*, 74
membranacea, *Polypodoidea*, 74, 75
membranaceus, *Fucus*, 74
Meredithia californica, 32
Meristotheca, 48
papulosa, 48
mertensii, *Dictyota*, 76
mertensii, *Ulva*, 76
mesenterica, *Heteractis*, 14
mesenterica, *Rivularia*, 14
Mesogloia
attenuata, 56
microcarpa, 31
Mesophyllum, 37
erubescens, 37
imbricatum, 37
pulchrum, 37
siamense, 37
simulans, 38
mesotricha, *Lyngbya*, 10
mexicana, *Caulerpa*, 106
mexicana, *Jania*, 35
mexicana, *Schizothrix*, 10, 12, 13
mexicana var. *pluriseriata*, *Caulerpa*, 106
micrarthodia, *Jania*, 35
microcarpa, *Halymenia*, 31
microcarpa, *Mesogloia*, 31
Microcladia, 57, 124
elegans, 57
glandulosa, 57
Microcoleus, 10
acutissimus, 10, 12
corymbosus, 14
lyngbyaceus, 8, 9, 10, 11,
tenerrimus, 10
vaginatus, 11
microcystis, *Carpacanthus*, 85
microcystum, *Sargassum*, 85
microcystum f. *luzonense*, *Sargassum*, 85
microcystum var. *microtis*, *Sargassum*, 85
Microdictyon, 95, 126
agardhianum, 95
boergesenii, 95
clathratum, 95
curtissiae, 95
japonicum, 95
montagnei, 100
okamurae, 95
umbilicatum, 5
vanbosseae, 5
micronesica, *Halimeda*, 115
microphyllum, *Sargassum*, 85
microphysa, *Caulerpa*, 106
microphysa, *Caulerpa racemosa* var. *clavifera* f., 106
microtis, *Sargassum microcystum* var., 85
Millepora
calcareo, 38
polymorpha, 38
miniata, *Wurdemannia*, 72
miniatus, *Fucus*, 72
miniatus, *Sphaerococcus*, 72
minima, *Chnoospora*, 79
minimus, *Fucus*, 79
minor, *Corallopsis*, 43
minor, *Corallopsis salicornia* var., 43
minor, *Gracilaria*, 43
minor, *Herposiphonia dendroidea* var., 64
minor, *Padina*, 78
minutissima, *Acetabularia*, 122
minutissima, *Crouania*, 56
minutulum, *Lithothamnion australe* f., 37
minutum, *Centroceras*, 54
mitchelliae, *Ectocarpus*, 73, 130
mitchelliae, *Hincksia*, 73, 130
mitchelliae var. *neilii*, *Giffordia*, 130
mitchelliae var. *neilii*, *Hincksia*, 130
mixta, *Bostrychia*, 62
mixta f. *inermis*, *Bostrychia*, 62
mixtum, *Sargassum cinctum* var., 82
miyabei, *Sargassum*, 86
moebii, *Acetabularia*, 122
molle, *Archaeolithothamnion erythraeum* f., 38
molle, *Sporolithon ptychoides* f., 38
mollis, *Dasya*, 59
mollis, *Polysiphonia*, 70
mollis var. *tongatensis*, *Polysiphonia*, 70
moluccense, *Lithophyllum*, 36
moluccense, *Lithothamnion*, 36
monile, *Halimeda*, 114
moniliformis, *Scinaia*, 25
Monostroma, 91, 126
latissimum, 91
nitidum, 91
montagneana, *Rhodymenia*, 45
montagneana, *Sarcodia*, 45
montagnei, *Boodlea*, 100
montagnei, *Microdictyon*, 100
moritziana, *Bostrychia*, 62
moritziana, *Polysiphonia*, 62
mucifera, *Sphacelaria*, 74
muelleri, *Codium*, 113
muelleri, *Dasya*, 60
muelleri, *Heterosiphonia*, 60
muelleri, *Lithothamnion*, 36
multifida, *Claudea*, 58
multijugum, *Ceramium*, 55
multipartita var. *aeruginosa*, *Gracilaria*, 42
muricatum, *Eucheuma*, 46
muricatum f. *depauperatum*, *Eucheuma*, 46
muricatum f. *incrassatum*, *Eucheuma*, 47
muricatus, *Fucus*, 46
murrayana, *Turbinaria*, 89
Murrayella, 69, 124
pericladus, 69
musciiformis, *Fucus*, 49
musciiformis, *Hypnea*, 49
musciiformis var. *esperii*, *Hypnea*, 49
musciiformis var. *hippuroides*, *Hypnea*, 50
muscioides, *Acanthophora*, 60
muscioides, *Fucus*, 60
myagroides, *Fucus*, 81
myagroides, *Myagropsis*, 81
Myagropsis, 81
myagroides, 81
myriocystum, *Sargassum*, 86
myriocystum var. *euryphyllum*, *Sargassum*, 86
nana, *Acrocystis*, 61
nana, *Laurencia*, 65
nana, *Pterocladia*, 27
natans, *Fucus*, 86
natans, *Sargassum*, 86
neilii, *Giffordia mitchelliae* var., 130
neilii, *Hincksia mitchelliae* var., 130
Nemalion schrammii, 20
neocaledonica, *Cladophoropsis*, 101
neocaledonica, *Spongiocladia*, 101
Neogoniolithon, 38
frutescens, 38
megalocystum, 38
Neomeris, 121
annulata, 121
nitida, 120
sphaerica, 120
vanbosseae, 121
Neurymenia, 69
fraxinifolia, 69
nidifica, *Laurencia*, 66
nidulans, *Hypnea*, 50
nigrescens, *Hypnea*, 50
nigricans, *Avrainvillea*, 117
nigrifolium, *Sargassum*, 86
nigroviridis, *Oscillatoria*, 11
nipae, *Catenella*, 48
nitens, *Ceramium*, 55
nitens, *Ceramium rubrum* var., 55
nitida, *Bornetella*, 119
nitida, *Neomeris*, 120
nitida, *Rivularia*, 14
nitidulum, *Acrochaetium*, 19
nitidum, *Monostroma*, 91
Nitophyllum tongatense, 5
nootkanus, *Fucus*, 50
Nostoc quoyi, 15
Nothogenia, 128
variolosa, 128
notarisii, *Porphyrosiphon*, 11
novae-hollandiae, *Sphacelaria*, 74
nuda, *Herposiphonia*, 64
Nullipora byssoides, 36
nummularia, *Caulerpa*, 108
nummularia, *Caulerpa peltata* var., 108
oblongata, *Corallina*, 23
oblongata, *Galaxaura*, 23
obscura, *Anadyomene*, 117
obscura, *Avrainvillea*, 117
obscura, *Herposiphonia*, 64
obscura, *Peyssonnelia*, 28
obtusa, *Laurencia*, 66
obtusa var. *dendroidea*, *Laurencia*, 67

- obtusa var. *densa*, Laurencia, 67
 obtusa var. *majuscula*, Laurencia, 66
 obtusa var. *paniculata*, Chondria, 67
 obtusa var. *patentiramea*, Chondria, 67
 obtusa var. *snackeyi*, Laurencia, 67
 obtusata, Corallina, 24
 obtusata, Galaxaura, 24
 obliquisata, Tubularia, 24
 obtusiloba, Rytidophylla, 71
 obtusiloba, Vidalia, 71
 obtusus, Fucus, 66
 occidentalis, Caulerpa chemnitzia var., 108
 occidentalis, Caulerpa freycinetii var. *boryana* f., 109
 occidentalis, Caulerpa racemosa var., 108
 occidentalis, Caulerpa serrulata var. *boryana* f., 109
 occidentalis, Udotea, 119
 ocellata, Dasya, 59
 ocellata, Dictyosphaeria, 102
 ocellata, Valonia, 102
 ocellatum, Ceramium, 59
 Ochlochaete dendroides, 91
 ogasawaraensis, Caloglossa, 58
 okamurae, Callophyllis, 32
 okamurae, Dilophus, 77
 okamurae, Enantiocladia, 63
 okamurae, Eucheuma, 47
 okamurae, Laurencia, 67
 okamurae, Lithophyllum, 36
 okamurae, Microdictyon, 95
 oligocystum, Sargassum, 86
 oligocystum var. *subflexuosum*, Sargassum, 86
 oligocystum var. *bernardinum*, Sargassum, 86
 oligospora, Bornetella, 120
 onkodes, Lithophyllum, 38
 onkodes, Lithothamnion, 38
 onkodes, Porolithon, 38
 onslowensis, Giffordia, 130
 onslowensis, Hincksia, 130
 oocyste, Sargassum, 86
 oocyste var. *bernardinum*, Sargassum, 87
 Opephyllum, 59
 opephyllum, 59
 opuntia, Catenella, 48
 opuntia, Corallina, 115
 opuntia, Corallopsis, 41
 opuntia, Fucus, 48
 opuntia, Halimeda, 115
 opuntia f. *cordata*, Halimeda, 116
 opuntia f. *hederacea*, Halimeda, 114
 opuntia f. *intermedia*, Halimeda, 116
 opuntia f. *renschii*, Halimeda, 116
 opuntia f. *triloba*, Halimeda, 116
 opuntia var. *hederacea*, Halimeda, 114
 orientale, Encoelium, 80
 orientalis, Acanthophora, 61
 orientalis, Acanthophora spicifera f., 61
 orientalis, Asperococcus, 80
 orientalis, Chamaedoris, 100
 orientalis, Halimeda, 115
 orientalis, Hydroclathrus, 80
 orientalis, Liagora, 21
 orientalis, Peyssonnelia rubra f., 28
 orientalis, Rhipidosiphon, 119
 orientalis, Rosenvingea, 80
 orientalis, Udotea, 119
 ornata, Asterocytis, 17
 ornata, Conferva, 17
 ornata, Turbinaria, 89
 ornata f. *evesiculosa*, Turbinaria, 90
 ornatum, Chroodactylon, 17
 ornatus, Fucus, 128
 ornatus, Fucus turbinatus var., 89
 Oscillaria, 127
 bonnemaisoni, 11
 margaritifera, 11
 sancta, 11
 submembranacea, 12, 127
 oscillarioides, Anabaina, 8
 Oscillatoria, 11, 123, 127
 bonnemaisoni, 11
 brevis, 5
 corallinae, 11
 curviceps, 11
 erythraea, 12
 lutea, 9
 margaritifera, 11
 nigroviridis, 11
 sancta, 11
 submembranacea, 12, 127
 ovale, Codium, 113
 ovale, Gastridium, 104
 ovalis, Bornetella, 120
 ovalis, Griffithsia, 56
 ovalis, Halicystis, 104
 ovata, Hincksia, 130
 ovatus, Ectocarpus, 130
 ovatus var. *intermedius*, Ectocarpus, 130
 pachynema, Bryopsis, 103
 pachynema, Valoniopsis, 103
 pacifica, Amphiroa, 33
 pacifica, Galaxaura, 24
 pacifica, Herposiphonia, 64
 pacifica, Jania, 35
 pacifica, Kallymenia, 32
 pacifica, Polysiphonia, 70
 pacifica var. *delicatula*, Polysiphonia, 70
 pacificum, Gelidium pusillum var., 27
 Padina, 77, 125
 arborescens, 77
 australis, 77
 boryana, 77
 commersonii, 77
 crassa, 78
 distromatica, 78
 fraseri, 78
 gymnospora, 77, 78
 jamaicensis, 78
 japonica, 78
 minor, 78
 pavonia, 78
 pavonica, 78
 sanctae-crucis, 78
 tenuis, 77
 tetrastomatica, 79
 palisada, Laurencia, 67
 pallascens, Lithophyllum, 36
 pallascens, Lithothamnion, 36
 Palmaria, 19
 palmata, 19
 palmata, Palmaria, 19
 palmatifida, Dasyopsis, 130
 palmatifidus, Eupogodon, 130
 palmatus, Fucus, 19
 Palmella conferta, 7
 Palmogloea aeruginosa, 7
 paniculata, Chondria obtusa var., 67
 paniculata, Laurencia, 67
 paniculata var. *snackeyi*, Laurencia, 67
 paniculatum, Sargassum, 87
 pannosa, Chnoospora, 80
 pannosa, Hypnea, 50
 papenfussii, Acrochaetium, 19
 papenfussii, Gracilaria, 43
 papillatum, Codium, 113
 papillosa, Chondria, 67
 papillosa, Laurencia, 67
 papillosus, Fucus, 67
 papulosa, Kallymenia, 48
 papulosa, Meristotheca, 48
 paradoxa, Conferva, 92
 paradoxa, Enteromorpha flexuosa subsp., 92
 paradoxa, Ulva, 92
 parca, Herposiphonia, 64
 parietalis, Erythrotrichia, 17
 parietina, Calothrix, 13, 14
 parietinus, Schizosiphon, 13
 parva, Pterocladia, 27
 parvifolia, Caulerpa, 104
 parvifolia, Caulerpa brachypus f., 104
 parvifolium, Sargassum, 87
 parvifolius, Fucus, 87
 parvipapillata, Laurencia, 67
 parvula, Acetabularia, 122
 parvula, Champia, 53
 parvula, Chondria, 53
 parvula, Halicystis, 104
 patens, Dictyota, 77
 patens, Plocamium, 45
 patens var. *schizophyllum*, Sargassum, 87
 patentiramea, Chondria, 68
 patentiramea, Chondria obtusa var., 67
 patentiramea, Laurencia, 67
 pavonia, Padina, 78
 pavonia var. *tenuis*, Zonaria, 78
 pavonica, Padina, 78
 pavonicus, Fucus, 78
 pavonius, Fucus, 78
 pectinata, Caulerpa freycinetii var., 109
 pectinata, Caulerpa serrulata var., 109
 pectinatum, Plocamium serrulatum var., 45
 Pedobesia ryukyuensis, 104
 pedicellata, Pollexenia, 59
 pellucida, Cladophora, 98
 pellucida, Conferva, 98
 peltata, Caulerpa, 108
 peltata, Caulerpa racemosa var., 108
 peltata, Rhipidopsis, 118
 peltata, Udotea, 118

peltata var. lacunosa, Rhodophyllis, 48
 peltata var. macrodisca, Caulerpa, 108
 peltata var. nummularia, Caulerpa, 108
 penicillata, Dasya, 130
 penicillata, Griffithsia, 57
 penicillata, Wrangelia, 57
 penicillatum, Phormidium, 12
 penicillatus, Eupogodon, 130
 pennata, Bryopsis, 103
 pennata var. secunda, Bryopsis, 103
 pentamera, Polysiphonia, 5
 pericladus, Hutchinsia, 69
 pericladus, Murrayella, 69
 perpusilla, Polysiphonia, 59
 perpusillum, Gelidium crinale var., 25
 perpusillum, Taenioma, 59
 persicina, Lyngbya, 12
 persicinum, Phormidium, 12
 personatum, Ceramium, 55
 pertusa, Ulva, 94
 Peyssonnelia, 27, 124
 calcea, 27
 conchicola, 27
 dienta, 28
 evae, 28
 foveolata, 28
 indica, 28
 luzonensis, 28
 mariti, 28
 obscura, 28
 rubra, 28
 rubra f. orientalis, 28
 squamaria, 28
 Phaeophila, 91
 dendroides, 91
 philippinense, Sargassum, 87
 philippinensis, Acetabularia, 122
 philippinensis, Acetabularia ryukyuensis
 var., 122
 philippinensis, Chlorocladus, 120
 philippinensis, Cladophora, 98
 philippinensis, Cladophoropsis, 101
 philippinensis, Litholepis indica f., 36
 Phormidium, 11
 ambiguum, 11, 14
 amoenum, 11
 crosbyanum, 11
 laysanense, 12
 penicillatum, 12
 persicinum, 12
 submembranaceum, 12, 127
 tinctorium, 12
 valderiae, 12
 valderianum, 12
 Phycoseris reticulata, 94
 Phyllophora, 51
 crenulata, 29
 intricata, 52
 maillardii, 29
 submaritima, 51
 Phymatolithon, 38
 calcareum, 38
 polymorphum, 38
 purpureum, 38
 pickeringii, Caulerpa, 111

pickeringii, Caulerpa webbia var., 111
 pilosa, Calothrix, 13, 14, 15
 pilosa, Dasyopsis, 60, 130
 pilosus, Eupogodon, 60, 130
 pilulifer, Fucus, 87
 piluliferum, Sargassum, 87
 pinnata, Erythrocladia, 17
 pinnata, Laurencia, 68
 pinnata, Lomentaria, 52
 pinnatifida, Laurencia, 5
 pinnatifolia, Ptilota, 130
 pinnatifolia var. digitata, Corallina, 34
 pinnatifolius, Eupogodon, 130
 plana, Dasya, 129
 planus, Eupogodon, 130
 platyclados, Codium, 113
 platydisca, Halimeda, 116
 platydisca, Halimeda tuna f., 116
 Pleonosporium, 57
 globuliferum, 57
 plicata, Anadyomene, 94
 Plocamium, 44
 costatum, 44
 patens, 45
 serrulatum var. pectinatum, 45
 telfairiae, 45
 tenellum, 62
 plocamium var. costata, Delesseria, 44
 plumarioides, Dasyphila, 56
 plumaris, Caulerpa, 110
 plumaris, Fucus, 110
 plumaris f. farlowii, Caulerpa, 110
 plumaris f. flagellata, Caulerpa, 110
 plumaris var. brevipes, Caulerpa, 110
 plumaris var. elegans, Caulerpa, 105
 plumaris var. longipes, Caulerpa, 110
 plumaris var. longiseta, Caulerpa, 110
 plumosa, Bryopsis, 103
 plumosa, Enteromorpha, 92
 plumosa, Ulva, 103
 plumosa var. secunda, Bryopsis, 103
 plumula, Herposiphonia, 64
 plumula, Polysiphonia, 64
 pluriseriata, Caulerpa mexicana var., 106
 Pocockiella variegata, 77
 podagricum, Erythrocolon, 52
 poiteui, Laurencia, 68
 poitei, Fucus, 68
 poko, Polysiphonia, 70
 Pollexenia pedicellata, 59
 Polycavernosa, 44
 debilis, 44
 polyceratium, Sargassum, 87
 polychroa, Leibleinia, 10
 Polycocelia vanhoefii, 5
 polycystum, Sargassum, 87
 polycystum var. euryphyllum, Sargassum, 86
 polycystum var. manilense, Sargassum, 85
 polymorpha, Millepora, 38
 polymorphum, Lithothamnion, 37, 38
 polymorphum, Phymatolithon, 38
 polyotis, Diplotrichia, 15
 polyotis, Rivularia, 15
 Polyphysa, 121
 spicata, 122

polypodioides, Dictyopteris, 74
 polypodioides, Fucus, 74, 75
 polypodioides, Ulva, 75
 Polypodoidea, 75
 membranacea, 74, 75
 polyrhiza, Chondria, 63
 Polysiphonia, 69, 124
 apiculata, 69
 beaudettei, 69
 calodictyon, 71
 ferulacea, 69
 flabellulata, 69
 forcipata, 69
 forfex, 69
 fragilis, 69
 gorgoniae, 69
 hawaiiensis, 70
 howei, 70
 mollis, 70
 mollis var. tongatensis, 70
 moritziana, 62
 pacificia, 70
 pacificia var. delicatula, 70
 pentamera, 5
 perpusilla, 59
 plumula, 64
 poko, 70
 savatieri, 70
 scopulorum, 70
 scopulorum var. villum, 70
 setacea, 70
 sparsa, 70
 sphaerocarpa, 70
 subtilissima, 71
 tenuis, 71
 tepida, 71
 tongatensis, 70
 tongatensis var. upolensis, 71
 triton, 71
 tsudana, 71
 upolensis, 71
 villum, 70
 Polystrata, 28
 dura, 28
 Polyzonium jungermannioides, 68
 Porolithon, 38
 onkodes, 38
 Porphyra, 18, 124
 atropurpurea, 18
 crispata, 18
 denticulata, 18
 marcosii, 18
 suborbiculata, 18
 variegata, 18
 Porphyrosiphon
 kurzii, 12
 notarisii, 11
 Portieria, 39, 128
 coccinea, 129
 dichotoma, 129
 harveyi, 129
 hornemannii, 39, 129
 japonica, 39, 129
 kilneri, 129
 spinulosa, 129

- Prionitis, 31
 articulata, 29
 cornea, 31
 schmitziana, 29
 procrusteanum, Eucheuma, 47
 procumbens, Ceramiella, 54
procumbens, Ceramium, 54
 procumbens, Thamnoclonium, 31
prolifer, Fucus, 106, 115, 116
 prolifera, Botryocarpa, 58
 prolifera, Carpopeltis, 29
 prolifera, Caulerpa, 106
 prolifera, Cladophora, 98
prolifera, Conferva, 98
prolifera, Cystoseira, 81
 prolifera, Enteromorpha, 93
prolifera, Giffordia, 130
prolifera, Gigartina, 29
prolifera, Hincksia, 130
prolifera, Ulva, 93
prorrepens, Herposiphonia, 5
 pseudoscillatoria, Anabaina, 8
 pseudospinulosum, Sargassum ilicifolium
 var., 85
 Pterocladia, 27, 124
 caloglossoides, 27
 capillacea, 27
 densa, 27
 nana, 27
 parva, 27
 pteropleuron, Sargassum, 87
Ptilota pinnatifolia, 130
 Ptilothamnion, 57
 cladophorae, 57
ptychoides f. *durum*, Sporolithon, 38
ptychoides f. *molle*, Sporolithon, 38
Pugetia japonica, 32
 pugniforme, Codium, 113
pulchella, Dasyopsis, 130
 pulchellum, Gelidium, 25
pulchellum var. *subspathulatum*, Sargassum,
 88
pulchellus, Eupogodon, 130
pulchellus, Fucus corneus var., 25
pulchrum, Lithothamnion, 37
 pulchrum, Mesophyllum, 37
pulverentula, Liagora, 5
pulvinata, Sphacelaria, 5
 pumila, Jania, 35
 Punctaria, 125
punicea, Baillouviana, 59
 punicea, Dasya, 59
purpurascens, Gracilaria, 43
purpureum, Lithothamnion, 38
 purpureum, Phymatolithon, 38
 pusilla, Boodleopsis, 117
 pusillum, Alsidium, 61
 pusillum, Gelidium, 25
 pusillum var. *pacificum*, Gelidium, 27
pusillus, Acrocarpus, 25
pusillus, Dichotomosiphon, 117
pusillus, Fucus, 25
 pygmaeus, Gymnogongrus, 51
 pyriformis, Botryocladia, 51
pyriformis, Chrysomenia, 51
 quisingii, Cladophora, 98
 quoyi, Brachytrichia, 15
quoyi, Nostoc, 15
 racemosa, Caulerpa, 106
racemosa var. *chemnitzia*, Caulerpa, 108
racemosa var. *clavifera*, Caulerpa, 107
racemosa var. *clavifera* f. *microphysa*, Cau-
 lerpa, 106
racemosa var. *corynephora*, Caulerpa, 107
racemosa var. *gracilis*, Caulerpa, 107
racemosa var. *laetevirens*, Caulerpa, 107
racemosa var. *lamourouxii*, Caulerpa, 107
racemosa var. *macra*, Caulerpa, 107
racemosa var. *macrophysa*, Caulerpa, 107
racemosa var. *occidentalis*, Caulerpa, 108
racemosa var. *peltata*, Caulerpa, 108
racemosa var. *turbinata*, Caulerpa, 108
racemosa var. *uvifera*, Caulerpa, 107
racemosus, Fucus, 106
 radicans, Bostrychia, 62
radicans, Rhodomela, 62
 Ralfsia, 73
 fungiformis, 73
rallsiae, Ectocarpus, 73, 130
rallsiae, Giffordia, 73, 130
rallsiae, Hincksia, 73, 130
 ramellifera, Gloioclada, 52
 ramosa, Struvea, 101
 ramosissima, Grateloupia, 30
 ramulosa, Enteromorpha, 93
ramulosa, Ulva, 93
ramulosa var. *spinosa*, Enteromorpha, 93
reinboldii, Goniolithon, 34
reinboldii, Hydrolithon, 34
reinboldii, Lithophyllum, 34
 renschii, Halimeda, 116
renschii, Halimeda opuntia f., 116
 repens, Chondria, 63
repens, Codium, 112
 repens, Dictyopteris, 75
 repens, Gelidiopsis, 40
repens, Gelidium, 40
repens, Haliseris, 75
requienii, Batrachospermum, 19
requienii, Trichogloea, 19
reticulata, Phycoseris, 94
 reticulata, Ulva, 84, 94
 retroflexa, Turbinaria conoides f., 89
 reyesii, Caulerpa, 108
Rhabdonia dura, 48
Rhipidosiphon
 javensis, 119
 orientalis, 119
Rhipilia longicaulis, 117
Rhipiliopsis, 118
 carolyniae, 118
 peltata, 118
 Rhizoclonium, 99
 africanum, 99
 capillare, 96
 crassipellitum var. *robustum*, 99
 grande, 99
 hookeri, 99
 kernerii, 99
 kochianum, 99
 riparium, 99
 setaceum, 99
 rhizophora, Griffithsia, 56
Rhodochorton, 127
 hancockii, 19
 sinicola, 19
Rhodomela
 calliptera, 61
 radicans, 62
 Rhodopeltis, 39, 124
 borealis, 39
 gracilis, 39
 Rhodophyllis, 48
 peltata var. *lacunosa*, 48
 Rhodymenia, 52, 124
 californica, 52
 coacta, 52
 decumbens, 52
 intricata, 52
 montagneana, 45
 spinulosa, 43
 tripinnata, 129
 rigens, Gelidium, 27
rigens, Sphaerococcus, 27
rigida, Actinotrichia, 22
rigida, Amphiroa, 33
rigida, Carpopeltis, 29
rigida, Cryptonemia, 29
rigida, Galaxaura, 22
rigida, Gelidiopsis, 25
rigida, Sphacelaria, 74
rigida, Ulva, 94
rigida, Ulva lactuca var., 94
rigidula, Sphacelaria, 74
rigidum, Gelidium, 25
rigidus, Fucus, 25
rigidus, Sphaerococcus, 25
riparia, Conferva, 99
riparium, Rhizoclonium, 99
 Rivularia, 14, 123
 bullata, 13, 14
 contarenii, 13
 mesenterica, 14
 nitida, 14
 polyotis, 15
rivularis, Bostrychia, 62
robusta, Calothrix, 14
robusta, Galaxaura, 24
robusta, Halimeda velasquezii var., 116
robusta, Liagora, 21
robustior, Avrainvillea lacerata var., 117
robustum, Acrochaetium, 19
robustum, Rhizoclonium crassipellitum
 var., 99
Roschera
 africana, 71
 condensata, 71
 rosea, Lyngbya, 10
 rosea, Mastophora, 37
 rosea, Zonaria, 37
 Rosenvingea, 80
 intricata, 80
 orientalis, 80
rosulata, Kylinia, 19

rotundatum, *Sargassum duplicatum* var., 83
 roxasii, *Acetabularia*, 122
 rubens, *Corallina*, 35
 rubens, *Jania*, 35
 rubra, *Peyssonnelia*, 28
 rubra, *Zonaria*, 28
 rubra f. *orientalis*, *Peyssonnelia*, 28
 rubrum var. *nitens*, *Ceramium*, 55
 rudis, *Galaxaura*, 23
 rudolphiana, *Cladophora*, 99
 rudolphiana, *Conserua*, 99
 rugosa, *Corallina*, 24
 rugosa, *Galaxaura*, 24
 rugulosa, *Cladophora*, 98
 rupestris, *Cladophora*, 98
 rupestris, *Conserua*, 98
 Rytiphlaea obtusiloba, 71
 ryukyuensis, *Acetabularia*, 122
 ryukyuensis, *Derbesia*, 104
 ryukyuensis, *Pedobesia*, 104
 ryukyuensis var. *philippinensis*, *Acetabularia*, 122

 saccharina, *Laminaria*, 94
 sagamianum, *Sargassum*, 87
 sagittata, *Corallina*, 34
 sagittatum, *Cheilosporum*, 34
 saidana, *Hypnea*, 50
 sakaii, *Cladophora*, 98
 salicifolius, *Fucus*, 88
 salicornia, *Corallopsis*, 43
 salicornia, *Gracilaria*, 43
 salicornia, *Sphaerococcus*, 43
 salicornia var. *minor*, *Corallopsis*, 43
 salicornoides, *Champia*, 53
 salina, *Enteromorpha*, 93
 sancta, *Oscillaria*, 11
 sancta, *Oscillatoria*, 11
 sanctae-crucis, *Padina*, 78
 sandei, *Sargassum*, 87
 sandriana, *Hincksia*, 130
 sandrianus, *Ectocarpus*, 130
 sanfordiana, *Asparagopsis*, 22
 Sarcodia, 45, 124
 ceylanica, 45
 montagneana, 45
 filamentosa, 58
 sargassi, *Acrochaetium*, 19
 Sargassum, 82, 125
 aciculare, 84
 aemulum, 82
 agardhianum, 82
 bacciferum, 86
 baccularia, 82
 belangeri, 82
 berberifolium, 82
 biforme, 82
 binderi, 86
 binderi var. *angustifolium*, 82
 binderi var. *vitiense*, 86
 carpophyllum, 85
 cervicorne, 82
 cinctum var. *mixtum*, 82
 cinctum var. *gracilentum*, 82

compactum, 85
 confusum, 82
 crispifolium, 82
 cristaefolium, 83
 cristatum, 82
 cystocarpum, 83
 cystophyllum, 83
 droserifolium, 83
 droserifolium var. *spathulatum*, 83
 duplicatum, 83
 duplicatum var. *rotundatum*, 83
 echinocarpum var. *vitiense*, 86
 elongatum, 83
 enerve, 84
 esperi, 83
 filicinum, 83
 filifolium, 83
 filifolium var. *aciculare*, 84
 filiforme, 84
 fluitans, 84
 fulvellum, 84
 furcatum, 84
 gaudichaudii, 84
 giganteifolium, 84
 gracile, 84
 granuliferum, 84
 hemiphyllum, 84
 heterocystum, 85
 hombronianum var. *manilense*, 85
 hystrix, 85
 hystrix var. *fluitans*, 84
 hystrix var. *spinulosus*, 85
 ilicifolium, 85
 ilicifolium f. *benkulense*, 85
 ilicifolium var. *compactum*, 85
 ilicifolium var. *duplicatum*, 83
 ilicifolium var. *pseudospinulosum*, 85
 kjellmanianum, 86
 latifolium, 85
 microcystum, 85
 microcystum f. *luzonense*, 85
 microcystum var. *microtis*, 85
 microphyllum, 85
 miyabei, 86
 myriocystum, 86
 myriocystum var. *euryphyllum*, 86
 natans, 86
 nigrifolium, 86
 oligocystum, 86
 oligocystum var. *bernardinum*, 86
 oligocystum var. *subflexuosum*, 86
 oocyste, 86
 oocyste var. *bernardinum*, 87
 paniculatum, 87
 parvifolium, 87
 patens var. *schizophyllum*, 87
 philippinense, 87
 piluliferum, 87
 polyceratium, 87
 polycystum, 87
 polycystum var. *euryphyllum*, 86
 polycystum var. *manilense*, 85
 pteropleuron, 87
 pulchellum var. *subspathulatum*, 88
 sagamianum, 87

sandei, 87
 serratifolium, 87
 siliquosum, 82, 87
 siliquosum var. *basilanicum*, 88
 siliquosum var. *bicornutum*, 88
 siliquosum var. *manipaense*, 88
 spinifex, 88
 subspathulatum, 88
 tenerrimum, 88
 vulgare, 84, 88
 vulgare var. *indicum*, 88
 yendoii, 88
 saundersii, *Ectocarpus*, 130
 saundersii, *Hincksia*, 130
 savatieri, *Polysiphonia*, 70
 scalaramosa, *Beckerella*, 25
 schizophylla, *Halochloa*, 87
 schizophyllum, *Sargassum patens* var., 87
 Schizosiphon
 gypsophilus, 14
 parietinus, 13
 Schizothrix, 12, 123
 arenaria, 13
 calcicola, 9, 10, 11, 12
 friesii, 12
 mexicana, 10, 12, 13
 tenerrima, 10, 12
 schmidtii, *Archaeolithothamnion*, 39
 schmidtii, *Sporolithon*, 39
 schmitziana, *Cryptonemia*, 29
 schmitziana, *Prionitis*, 29
 schrammi, *Helminthocladia*, 20
 schrammii, *Liagoropsis*, 20
 schrammii, *Nemalion*, 20
 Scinaia, 25, 124
 hormoides, 25
 latifrons, 25
 moniliformis, 25
 scopulorum, *Calothrix*, 14
 scopulorum, *Conserua*, 14
 scopulorum, *Polysiphonia*, 70
 scopulorum var. *villum*, *Polysiphonia*, 70
 Scytonema, 15
 hoffman-bangii, 15
 hofman-bangii, 15
 hofmannii, 15
 hofmannii, 14
 intricatum, 61, 62
 Scytosiphon erectus, 92
 Sebdenia, 40
 limensis, 40
 yamadae, 40
 secunda, *Bryopsis pennata* var., 103
 secunda, *Bryopsis plumosa* var., 103
 secunda, *Herposiphonia*, 64
 secunda, *Herposiphonia tenella* f., 64
 secunda, *Hincksia*, 130
 secunda, *Hutchinsia*, 64
 secunda f. *tenella*, *Herposiphonia*, 64
 secundatum, *Acrochaetium*, 128
 secundatum, *Callithamnion daviesii* var., 128
 secundus, *Ectocarpus*, 130
 sedifolia, *Chondria*, 63
 segawae, *Liagora*, 21

selago, *Caulerpa*, 108
selago, *Fucus*, 108
sempierna, *Calothrix*, 10
sempierna, *Lyngbya*, 10
seriatum, *Acrochaetium*, 19
sericea, *Cladophora*, 99
sericea, *Conserva*, 99
serpens, *Ceramium*, 55
serra, *Eucheuma*, 47
serra, *Sphaerococcus*, 47
serrata, *Thysanoclaadia*, 45
serratifolium, *Sargassum*, 87
serratifolius, *Fucus*, 87
serratus, *Callophycus*, 45
serrulata, *Caulerpa*, 108
serrulata f. *lata*, *Caulerpa*, 109
serrulata f. *spiralis*, *Caulerpa*, 109
serrulata var. *boryana*, *Caulerpa*, 109
serrulata var. *boryana* f. *longifolia*, *Caulerpa*, 109
serrulata var. *boryana* f. *occidentalis*, *Caulerpa*, 109
serrulata var. *pectinata*, *Caulerpa*, 109
serrulatum, *Hypoglossum*, 58
serrulatum var. *pectinatum*, *Plocamium*, 45
serrulatus, *Fucus*, 108
sertularioides, *Caulerpa*, 109
sertularioides, *Fucus*, 109, 110
sertularioides f. *brevipes*, *Caulerpa*, 110
sertularioides f. *farlowii*, *Caulerpa*, 110
sertularioides f. *flagellata*, *Caulerpa*, 110
sertularioides f. *longipes*, *Caulerpa*, 110
sertularioides f. *longiseta*, *Caulerpa*, 110
sessilis, *Dasya*, 59
sessilis, *Kallymenia*, 32
setacea, *Polysiphonia*, 70
setaceum, *Rhizoclonium*, 99
setchellii, *Codium*, 112
setchellii, *Coriophyllum*, 5
setchellii, *Dictyosphaeria*, 102
setchellii, *Liagora*, 21
seticulosa, *Chondria*, 63
seticulosa, *Conserva*, 63
seticulosa, *Laurencia*, 63
siamense, *Lithothamnion*, 37
siamense, *Mesophyllum*, 37
siamense f. *simulans*, *Lithothamnion*, 38
siamensis, *Boodlea*, 100
sibogae, *Archaeolithothamnion*, 39
sibogae, *Chondria*, 63
sibogae, *Cladophora*, 99
sibogae, *Galaxaura*, 5
sibogae, *Sporolithon*, 39
siliquosum, *Sargassum*, 82, 87
siliquosum var. *basilanicum*, *Sargassum*, 88
siliquosum var. *bicornutum*, *Sargassum*, 88
siliquosum var. *manipaense*, *Sargassum*, 88
simplex, *Conserva*, 63
simplex, *Digenea*, 63
simpliciuscula, *Bostrychia*, 62
simpliciuscula, *Bostrychia tenuis* f., 62

simpliciuscula var. *vesiculifera*, *Caulerpa*, 111
simulans, *Halimeda*, 116
simulans, *Lithothamnion*, 38
simulans, *Lithothamnion siamense* f., 38
simulans, *Mesophyllum*, 38
sinicola, *Acrochaetium*, 19
sinicola, *Ceramium*, 55
sinicola, *Rhodochorton*, 19
sinuosa, *Colpomenia*, 80
sinuosa, *Ulva*, 80
Siphonocladus fasciculatus, 100
Sirocoleum, 12
kurzii, 12
Sirophysalis, 81
sisymbrioides, *Cystophyllum*, 81
sisymbrioides, *Fucus*, 81
skottsbergii, *Botryocladia*, 51
skottsbergii, *Chrysomenia*, 51
snackeyi, *Gracilaria arcuata* var., 41
snackeyi, *Laurencia obtusa* var., 67
snackeyi, *Laurencia paniculata* var., 67
Solieria, 48
dura, 48
solutum, *Hormothamnium*, 8
sordida, *Avrainvillea*, 117
sordida, *Calothrix*, 10
sordida, *Hincksia*, 130
sordida, *Leibleinia*, 10
sordida, *Lyngbya*, 10, 12
sordida, *Udotea*, 117
sordidus, *Ectocarpus*, 130
sparsa, *Lophosiphonia*, 70
sparsa, *Polysiphonia*, 70
spathulata, *Champia*, 53
spathulata, *Delesseria*, 58
spathulatum, *Hypoglossum*, 58
spathulatum, *Sargassum droserifolium* var., 83
Spatoglossum, 79, 125
asperum, 79
variabile, 79
speciosa, *Martensia*, 59
spectabile, *Cheilosporum*, 5
spectabilis, *Vanvoorstia*, 59
Spermothamnion, 124
cladophorae, 57
yonakuniense, 56
Sphacelaria, 74, 125
furcigera, 74
mucifera, 74
novae-hollandae, 74
pulvinata, 5
rigida, 74
rigidula, 74
tribuloides, 74
sphaerica, *Bornetella*, 120
sphaerica, *Neomeris*, 120
sphaerocarpa, *Polysiphonia*, 70
Sphaerococcus
canaliculatus, 41
compressus, 41
conservoides, 44
corallopsis, 65
denticulatus, 44

distichus, 42
divaricatus, 49
gelatinus, 44, 47
intricatus, 40
isiformis, 47
lactuca var. *luxurians*, 29
lichenoides, 42, 44
miniatus, 72
rigens, 27
rigidus, 25
salicornia, 43
serra, 47
spinellus, 50
textorii, 43
spicata, *Polyphysa*, 122
spicifera, *Acanthophora*, 60
spicifera f. *orientalis*, *Acanthophora*, 61
spiciferus, *Fucus*, 60
spinella, *Dasya*, 129
spinella, *Hypnea*, 50
spinellus, *Eupogodon*, 130
spinellus, *Sphaerococcus*, 50
spinescens, *Enteromorpha*, 93
spinifex, *Sargassum*, 88
spiniforme, *Gelidium*, 25
spiniformis, *Fucus*, 25
spinigera, *Gracilaria*, 43
spinosa, *Enteromorpha ramulosa* var., 93
spinosum, *Eucheuma*, 46
spinosus, *Fucus*, 46
spinuligera, *Endosiphonia*, 63
spinulosa, *Gracilaria*, 43
spinulosa, *Portieria*, 129
spinulosa, *Rhodymenia*, 43
spinulosus, *Carpacanthus*, 85
spinulosus, *Chondrococcus*, 129
spinulosus, *Sargassum hystrix* var., 85
spiralis, *Caulerpa freycinetii* var. *typica* f., 109
spiralis, *Caulerpa serrulata* f., 109
spiralis, *Chaetomorpha*, 97
Spirulina, 12
major, 12
subsalsa, 12
Spongia vermicularis, 120
spongiosum, *Ceratodictyon*, 40
Spongocarpus hemiphyllus, 85
Spongocladia, 125
dichotoma, 100
neocaledonica, 101
vaucheriaeformis, 101
Spongodendron dichotomum, 100
Spongomorpha, 126
Spongopsis mediterranea, 96
Sporolithon, 38
erythraeum, 38
ptychoides f. *durum*, 38
ptychoides f. *molle*, 38
schmidtii, 39
sibogae, 39
timorensis, 39
spumosa, *Udotea argentea* var., 119
Spyridia, 57
filamentosa, 49, 57,
velasquezii, 57

- squalida*, *Galaxaura*, 24
squamaria, *Peyssonnelia*, 28
squamarius, *Fucus*, 28
stanleyi, *Dasyopsis*, 130
stanleyi, *Eupogodon*, 130
stellata, *Anadyomene*, 94
stellata, *Ulva*, 94
stellulifera, *Hypnea cornuta* var., 49
striata, *Galaxaura*, 24
striatum, *Eucheuma*, 47
Struvea, 101
 anastomosans, 101
 delicatula, 101
 ramosa, 101
struveoides, *Boodlea*, 100
stuposa, *Halimeda*, 116
Stytopodium, 79
 flabelliforme, 79
subcorticata, *Balliella*, 54
subcorticatum, *Antithamnion*, 54
subcylindrica, *Amphiroa*, 33
subdigitata, *Halimeda discoidea* f., 114
subdisticha, *Herposiphonia*, 64
subflexuosum, *Sargassum oligocystum* var., 86
subfruticulosa, *Galaxaura*, 24
subintegra, *Erythrocladia*, 17
submarina, *Enteromorpha flexuosa* f., 92
submaritima, *Phyllophora*, 51
submembranacea, *Oscillaria*, 12
submembranacea, *Oscillatoria*, 12
submembranaceum, *Phormidium*, 12, 127
suborbiculata, *Porphyra*, 18
subsalsa, *Spirulina*, 12
subserrata, *Caulerpa*, 110
subsimplex, *Laurencia*, 68
subspatulatum, *Sargassum*, 88
subspatulatum, *Sargassum pulchellum* var., 88
subtile, *Lithothamnion indicum* f., 37
subtilissima, *Polysiphonia*, 71
subverticillata, *Galaxaura*, 24
Suhria, 128
sundanensis, *Cladophoropsis*, 101
surculigera, *Laurencia*, 68
Symploca, 13, 123
 howei, 13
 hydroides, 13
 laeteviridis, 13
taenicola, *Halimeda*, 116
Taenioma, 59
 perpusillum, 59
tambalangii, *Eucheuma alvarezii* var., 45
Tapeinodasya, 60
 bornetii, 60
tawallina, *Zellera*, 59
taxifolia, *Caulerpa*, 111
taxifolia var. *crassifolia*, *Caulerpa*, 106
taxifolius, *Fucus*, 111
taxiformis, *Asparagopsis*, 21
taxiformis, *Fucus*, 21, 22
taylorii, *Ceramium*, 56
taylorii, *Gelidiella*, 25
telfairiae, *Plocamium*, 45
telfairiae, *Thamnophora*, 45
tenax, *Fucus*, 27
tenax, *Gloiopeltis*, 27
tenella, *Bostrychia*, 62
tenella, *Corallina*, 35
tenella, *Dasyopsis*, 130
tenella, *Gigartina*, 51
tenella, *Herposiphonia*, 64
tenella, *Herposiphonia secunda* f., 64
tenella, *Hutchinsia*, 64
tenella, *Jania*, 35
tenella f. *secunda*, *Herposiphonia*, 64
tenella var. *zaca*, *Jania*, 35
tenellum, *Plocamium*, 62
tenellus, *Eupogodon*, 130
tenellus, *Fucus*, 62
tenera, *Galaxaura*, 23
tenerrima, *Schizothrix*, 10, 12
tenerrimum, *Ceramium*, 56
tenerrimum, *Hormoceras*, 56
tenerrimum, *Sargassum*, 88
tenerrimus, *Microcoleus*, 10
tenuae, *Anotrichium*, 53
tenuae, *Codium*, 113
tenuis, *Bostrychia*, 62
tenuis, *Griffithsia*, 53
tenuis, *Hypnea cenomyce* var., 48
tenuis, *Liagora*, 21
tenuis, *Padina*, 77
tenuis, *Polysiphonia*, 71
tenuis, *Zonaria pavonia* var., 78
tenuis f. *simpliciuscula*, *Bostrychia*, 62
tenuissima, *Bryopsis*, 104
tenuissima, *Derbesia*, 104
tenuissima, *Jania*, 35
tenuissimum, *Ceramium*, 56
tenuissimum, *Ceramium diaphanum* var., 56
tepida, *Polysiphonia*, 71
terminalis, *Giffordia*, 130
terminalis, *Hinckia*, 130
tetrastromatica, *Padina*, 79
textorii, *Gracilaria*, 43
textorii, *Sphaerococcus*, 43
Thamnoclonium, 31
 procumbens, 31
 treubii, 31
Thamnophora telfairiae, 45
thierryi, *Acanthophora*, 61
thyrsoides, *Hinckia*, 130
thyrsoides, *Ectocarpus*, 130
Thysanocladia serrata, 45
timorense, *Archaeolithothamnion*, 39
timorense, *Sporolithon*, 39
tinctorium, *Phormidium*, 12
Titanophora, 40, 124
 incrusters, 40
 weberae, 40
Tolypocladia, 71, 124
 calodictyon, 71
 condensata, 71
 glomerulata, 71
tomentosum, *Codium*, 113
tongatense, *Nitophyllum*, 5
tongatensis, *Polysiphonia*, 70
tongatensis, *Polysiphonia mollis* var., 70
tongatensis var. *upolensis*, *Polysiphonia*, 71
torresiensis, *Chlorodesmis*, 118
torta, *Chaetomorpha*, 97
torta, *Chaetomorpha clavata* var., 97
tortuosa, *Chaetomorpha*, 96
tortuosa, *Conferva*, 96
Tremella difformis, 79
treubii, *Thamnoclonium*, 31
trialata, *Turbinaria*, 90
trialata, *Turbinaria vulgaris* var., 90
trialata var. *capensis*, *Turbinaria*, 90
triangularis, *Fucus*, 131
triangulare, *Bryothamnion*, 131
tribuloides, *Sphacelaria*, 74
tribulus, *Amphiroa*, 33
tribulus, *Corallina*, 33
trichia, *Herposiphonia*, 64
Trichodesmium erythraeum, 12
Trichogloea, 19, 125
 requenii, 19
trichoglocae, *Acrochaetium*, 19
Trichosolen, 126
trichotoma, *Cladophora*, 98
trichotoma, *Conferva*, 98
tridens, *Corallina*, 115
tridens, *Halimeda*, 115
tridens f. *lamourouxii*, *Halimeda*, 115
trifarius, *Fucus*, 130
triloba, *Halimeda*, 115
triloba, *Halimeda opuntia* f., 116
trinode, *Cystophyllum*, 81
triqueter, *Fucus*, 81, 131
triquetra, *Cystoseira*, 81, 131
triquetra, *Hormophysa*, 81, 130
triquetrum, *Bryothamnion*, 130
tripinnata, *Desmia*, 129
tripinnata, *Portieria*, 129
triton, *Polysiphonia*, 71
tronoi, *Laurencia*, 68
tropica, *Laurencia*, 68
tsudana, *Polysiphonia*, 71
Tubularia
 obtusata, 24
 umbellata, 24
tubulosa, *Enteromorpha*, 92
tubulosa, *Enteromorpha intestinalis* f., 92
tubulosa, *Enteromorpha intestinalis* var., 92
tuna, *Corallina*, 116
tuna, *Halimeda*, 116
tuna f. *platydisca*, *Halimeda*, 116
Turbinaria, 88, 89, 125
 condensata, 88
 conoides, 88
 conoides f. *laticuspidata*, 89
 conoides f. *retroflexa*, 89
 conoides var. *evesiculosa*, 90
 decurrens, 89
 denudata, 89
 filamentosa, 89
 luzonensis, 89
 murrayana, 89
 ornata, 89
 ornata f. *evesiculosa*, 90
 trialata, 90

trialata var. capensis, 90
 turbinata, 90
 vulgaris, 90
 vulgaris var. conoides, 88
 vulgaris var. trialata, 90
turbinata, *Caulerpa clavifera* var., 108
turbinata, *Caulerpa racemosa* var., 108
turbinata, *Turbinaria*, 90
turbinatus, *Fucus*, 90
turbinatus var. *ornatus*, *Fucus*, 89
 turgida, *Gracilaria*, 43
turneri, *Cystophyllum*, 81
 tuticorinense, *Acrochaetium*, 19
Tydemanina, 118
 expeditionis, 118
typica f. *lata*, *Caulerpa freycinetii* var., 109
typica f. *spiralis*, *Caulerpa freycinetii* var., 109

ubianum, *Lithothamnion australe* f., 37
Udotea, 118
 argentea, 118
 argentea var. *spumosa*, 119
 flabellum, 119
 geppii, 119
 glaucescens, 119
 indica, 119
 javensis, 119
 occidentalis, 119
 orientalis, 119
peltata, 118
sordida, 117
Ulva, 93, 126
 articulata, 52
atropurpurea, 18
 bullata, 14
 caespitosa, 48
 cavernosa, 101
 compressa, 91, 93
 dichotoma, 76
 fasciata, 93
 flexuosa, 92
 gigantea, 94
 intestinalis, 92
 lactuca, 93
 lactuca var. *latissima*, 93
 lactuca var. *rigida*, 94
 latissima, 93
 mertensii, 76
 paradoxa, 92
 pertusa, 94
 plumosa, 103
 polypodioides, 75
 prolifera, 93
 ramulosa, 93
 reticulata, 94, 80
 rigida, 94
 sinuosa, 80
 stellata, 94
 umbilicalis, 77
 umbellata, *Galaxaura*, 24
 umbellata, *Tubularia*, 24
 umbilicalis, *Ulva*, 77
 umbilicatum, *Microdictyon*, 5

uncinata, *Cladophora*, 97
 undulata, *Dictyopteris*, 75
 undulata, *Laurencia*, 68
 unguolata, *Corallina*, 35
 unguolata, *Jania*, 35
 unguolata f. *brevior*, *Corallina*, 36
 unguolata f. *brevior*, *Jania*, 36
 upolensis, *Polysiphonia*, 71
 urvilliana, *Caulerpa*, 111
 urvilliana var. *vitiensis*, *Caulerpa*, 111
 utricularis, *Conferva*, 103
 utricularis, *Valonia*, 103
 uvaria, *Chondria*, 51
 uvaria, *Chrysomenia*, 51
 uvarioides, *Botryocladia*, 51
 uvifer, *Fucus*, 107
 uvifera, *Caulerpa*, 107
 uvifera, *Caulerpa racemosa* var., 107

vagabunda, *Cladophora*, 99
 vagabunda, *Conferva*, 99
 vagabundum, *Ceramium*, 56
 vagans, *Ceramium*, 56
 vaginatus, *Microcoleus*, 11
 valderiae, *Leptothrix*, 12
 valderiae, *Phormidium*, 12
 valderianum, *Phormidium*, 12
 valentiae, *Fucus*, 50
 valentiae, *Hypnea*, 50
 valida, *Liagora*, 21
 Valonia, 102
 aegagropila, 102
 confervoides, 102
 fastigiata, 102
 favulosa, 102
 forbesii, 100
 macrophysa, 103
 ocellata, 102
 utricularis, 103
 ventricosa, 103
 verticillata, 102
 valonioides, *Amphiroa*, 34
 Valoniopsis, 103
 pachynema, 103
 vanbosseae, *Boodlea*, 5
 vanbosseae, *Cymopolia*, 120
 vanbosseae, *Dictyosphaeria*, 102
 vanbosseae, *Microdictyon*, 5
 vanbosseae, *Neomeris*, 121
 vanhoevelii, *Polycoclea*, 5
 Vanvoorstia, 59
 spectabilis, 59
 variabile, *Gelidium*, 40
 variabile, *Spatoglossum*, 79
 variabilis, *Gelidiopsis*, 40
 variegata, *Dictyota*, 77
 variegata, *Lobophora*, 77
 variegata, *Pocockiella*, 77
 variegata, *Porphyra*, 18
 variegata, *Zonaria*, 77
 variegatum, *Diploderma*, 18
 variegatus, *Gymnosorus*, 77
 variolosa, *Nothogenia*, 128

Vaucheria
 fastigiata, 118
 marina, 104
 vaucheriaeformis, *Cladophoropsis*, 101
 vaucheriaeformis, *Spongocladia*, 101
 velasquezii, *Acetabularia*, 122
 velasquezii, *Halimeda*, 116
 velasquezii, *Spyridia*, 57
 velasquezii var. *robusta*, *Halimeda*, 116
 venezuelensis, *Gracilaria*, 44
 ventricosa, *Valonia*, 103
 venusta, *Laurencia*, 68
 veprecula, *Galaxaura*, 23
 vermicularis, *Dasycladus*, 120
 vermicularis, *Spongia*, 120
 verrucosa, *Gracilaria*, 44, 123
 verrucosus, *Fucus*, 44
 versicolor, *Fucus*, 26
 versicolor, *Gelidium*, 26
 versluysii, *Dictyosphaeria*, 102
 verticillata, *Boodleopsis*, 117
 verticillata, *Caulerpa*, 111
 verticillata, *Ernodesmis*, 102
 verticillata, *Valonia*, 102
 vesiculifera, *Caulerpa*, 111
 vesiculifera, *Caulerpa simpliciuscula* var., 111
 Vidalia, 71
 obtusiloba, 71
 vieillardii, *Champia*, 53
 vieillardii, *Gracilaria*, 44
 viguieri, *Calothrix*, 14
 villum, *Polysiphonia*, 70
 villum, *Polysiphonia scopulorum* var., 70
 violacea, *Leibleinia*, 10
 vitiense, *Sargassum binderi* var., 86
 vitiense, *Sargassum echinocarpum* var., 86
 vitiensis, *Caulerpa urvilliana* var., 111
 volubilis, *Dictyota*, 76
 vulgare, *Sargassum*, 84, 88
 vulgare var. *indicum*, *Sargassum*, 88
 vulgaris, *Turbinaria*, 90
 vulgaris var. *conoides*, *Turbinaria*, 88
 vulgaris var. *trialata*, *Turbinaria*, 90

 webbiana, *Caulerpa*, 111
 webbiana var. *pickeringii*, *Caulerpa*, 111
 weberae, *Titanophora*, 40
 wentii, *Exophyllum*, 63
 Wrangelia, 57
 argus, 57
 bicuspidata, 57
 penicillata, 57
 wrightiana, *Cladophora*, 99
 wrightii, *Anadyomene*, 95
 wrightii, *Halicoryne*, 122
 Wurdemannia, 72
 miniata, 72
 wurdemannii, *Heterosiphonia*, 60
 wurdemannii, *Dasya*, 60
 wurdemannii var. *laxa*, *Heterosiphonia*, 60

 yamadae, *Bangia*, 18
 yamadae, *Sebdenia*, 40

Yamadaella, 20
 caenomyce, 20
yamadana, Laurencia, 68
yendoi, Sargassum, 88
yonakuniense, *Spermothamnion*, 56
yonakuniensis, *Gordoniella*, 56
zacaе, *Ceramium*, 56
zacaе, *Jania tenella* var., 35

Zellera, 59
 tawallina, 59
zollingeri, *Cladophora*, 101
zollingeri, *Cladophoropsis*, 101
Zonaria, 79
 diesingiana, 79
 flabellata, 79
 fraseri, 78

gymnospora, 77, 78
linearis, 76
pavonia var. *tenuis*, 78
rosea, 37
rubra, 28
variegata, 77
zonata, *Amphiroa*, 34

Corrections to Smithsonian Contributions to the Marine Sciences Number 27:

Page 69. *Polysiphonia beaudettei*. First entry should be spelled the same as the centered heading.

Page 142. Delete van den Hoek from the authorship of van den Hoek, Vannajan, and Trono, then transfer the two references to page 153, preceding Velasquez.

Page 157. Change explanation of Index to read:
(Primary entries in roman, synonyms and names mentioned incidentally in italic.)

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